Technical University of Denmark
National Institute for Aquatic Resources

Annual Report on the Danish National Data Collection Programmes for 2015

National Institute for Aquatic Resources
Danish AgriFish Agency
Department of Food and Resource Economics
Statistics Denmark

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I. General framework

This document presents the Annual Report (AR) on the work carried according to the Danish National Programme (NP) for data collection in the fisheries sector for the year 2014. The programme has been carried out in accordance with the rules laid down in the *"Commission Regulation (665/2008) and Commission Decision (2010/93/EC) adopting a multi annual Community programme pursuant to Council Regulation (EC) No 199/2008 establishing a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy"*, hereafter referred to as "DCF" in this AR.

The format of this report is structured following the most recent guidelines from the Commission[1].The AR is structured in a number of modules. In the following chapters a description is given of the activities related to the DCF that have been carried out by Denmark.

Denmark has in 2010 initiated a work to improve the sampling design of the metier based sampling following the outcomes of ICES WKACCU and WKPRECISE. This outcome has led to a change in the sampling frame from 2011 to a more statistically sound sampling program and since 2012 a full implementation of a statistical sound sampling schemes for the collection fisheries data. The achievements of sampling in 2015 were at a similar level compared to the latest two years, however improvement in the sampling design has been made.

The list of derogations applied for and whether these have been approved or rejected is given in table 1.A.1

Denmark has for years made agreement on collection of biological sampling of landings or bilateral cooperation with a number of MS such as Sweden, Belgium, Germany, Ireland and the Netherlands. This bilateral coordination has been continued in 2015. These agreements are listed in table 1.A.2.

In general the Danish national data collection programme has been carried out in 2015 as in the previous years.

It is important to stress when comparing the Danish NP with the AR 2015 that the NP was written in 2011 based on the reference years 2009 and 2010 and that the Commission has asked MS just to roll over the 2011 programme also to cover the programme period 2014-2016. Fleets, fisheries and quotas may have changed between 2009/2010 and the AR year 2015 and therefore not necessarily comparable.

II. National Data Collection Organisation

II.A National correspondent and participating institutes

Denmark has assigned Senior Fisheries Advisor Jørgen Dalskov, Secretariat for Public Sector Consultancy at DTU Aqua as the National Correspondent.

[1] Guidance for the submission of Annual Report on the National Data Collection Programmes under Council Regulation (EC) 199/2008, Commission Regulation (EC) 665/2008 and Commission Decision 2010/93/EC, Version for Annual Report 2015 (January 2016)

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In Denmark four institutes or organisations have been involved in carrying out the collection of, the management of and the use of data within the fisheries, aquaculture and the fish processing sectors:

1. National institute of Aquatic Resources (DTU Aqua) is an institute under the Technical University of Denmark. The institute carries out research, monitoring and provides advice concerning sustainable exploitation of live marine and fresh water resources. Furthermore, the institute is responsible for providing data for ICES stock assessment work and participates in varies ICES assessment working groups, planning and expert groups as well as in the ACOM work. The institute is having a public sector consultancy contract with the Danish Ministry for Agriculture, Fisheries and Food.

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2. The Danish AgriFish Agency (NAER) is an agency under the Ministry of Food, Agriculture and Fisheries. The staff of the Danish AgriFish Agency, a total of approximately 1,200, strives countrywide to create the optimal conditions for sustainable growth and green transformation in the fields of:

- Agriculture
- Fisheries and aquaculture
- Plants and horticulture

The aim of the agency is to secure an efficient and professional administration and reap the most benefits from working across our respective areas.

In addition, one of the tasks of the agency are to provide service to the Minister and the political level, assist in law proposals and contribute to international negotiations. Furthermore, NAER is responsible for making rules

and regulations in the Danish fisheries as well as administer the Danish fishing, to inspect and control fishing activities and finally to make primary statistics on fisheries.

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3. Department of Food and Resource Economics (IFRO) is an institute under KU Life, a faculty of life science a part of the University of Copenhagen. The Researchers and academic staff of the Institute have backgrounds and experience in economics, agricultural and resource economics, agronomy, as well as a wide range of statistical methods and applied research tools.

Danish Food and Resource Economics Institute (IFRO)

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4. Statistics Denmark (DST) The aim of the institution is to collect, process and publish statistical information on social and economic conditions. Additional DST contributes to the international statistical cooperation. Furthermore, DST is also actively involved in the statistical activities in the UN, OECD, IMF and in the Nordic countries, etc. DST is also carrying out statistical tasks for private and public customers.

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A Steering Group has been established with members from all four involved Institutes. The main objective of the Steering Group is to coordinate the work to be carried out according to the DCF.

Once or twice a year representatives from the involved institutes meet for discussing the coming year or present years programme. Usually these meetings take 1-2 hours. Main topics to discuss are the production and the content of the DFAD data base (see section VI.1 for details) and participation in various expert working group

meetings. As it is very clear which of the partners are responsible for the various tasks it is only necessary to make sure deadlines for providing data to each other are agreed.

The daily cooperation can be made by using e-mails or phone calls. The representatives from the involved institutes have been working together for a number of years and therefore, no major disagreements or other issues are troublesome.

The national DCF website is up running http://www.dcf-denmark.dk/.

II.B Regional and International coordination

II.B 1 Attendance of International meetings

Most of the planned meetings have been attended by Danish representation in 2015. Denmark attended the DCF coordination meetings for the Baltic region and for the North Sea and Eastern Arctic region. The meeting attendance is listed in table II.B.1.

All surveys are coordinated internationally by ICES planning groups. The survey planning groups, which were relevant to Denmark the BIFSWG, IBTSWG, WGIPS were in 2015 attended by representatives from Denmark.

Denmark is a member of a large number of ICES WG, WK or PG groups. Those groups which have a major interest for Denmark one or more DTU Aqua staff members participate at the meeting. The ICES or other international meetings attended by Denmark are listed in table II.B.1. Some other ICES group meeting have minor interest and DTU staff members only participate at correspondence level and all Danish data is provided to the group.

II.B 2 Follow-up of regional and international recommendations

General recommendations made by RCM Baltic, the RCM NS &EA and the RCM NA dealt with by the Liaison group in 2013 and actions taken by Denmark are listed in table II.B.2.

III. Module of the evaluation of the fishing sector

III.A General description of the fishing sector

The number of vessels registered for Denmark in the Community Fishing Fleet Register on the 1st of January 2014 was 2,529, of which 986 had no activity in 2014. The 1,543 vessels which were active during 2014 had landings of fish to a total value of EUR 327 million or 86.2 per cent of the total value of the Danish fishery in 2014. The remaining 13.8 per cent of the value of the Danish fishery in 2014, totalling EUR 52 million, were landed from vessels entering the register after the beginning of the year (cf. table 1).

Table 1. Active registered vessels in the Danish Fishery 2014.

	Vessels registered the whole	Exits register	Enters and stay in register	Enters and exits during	Active fishermen with no	Total active register

	year	during year	during year	year	vessels	units
Vessel length groups	---------- Active registered vessels ----------					
<10 m	998	48	56	19	19	1,140
10 - <12 m	108	10	10	4	-	132
12 - <18 m	212	23	26	11	-	272
18 - <24 m	66	11	11	2	-	90
24 - <40 m	34	4	4	-	-	42
40 m and above	23	6	5	1	-	35
All length groups	1,441	102	112	37	19	1,711
Total value of landings in 1000 EUR	307,702	19,386	45,508	6,720	94	379,410
Per cent share of value of landings	81.10%	5.11%	11.99%	1.77%	0.02%	100.0%

During the year 2014 an additional 280 vessels were registered of which 149 vessels became active. So the total number of Danish vessels with landings of fish in 2014 was 1,692. Many of these vessels are small boats used part time by fishermen, who have more than a single vessel at hand, and shift between one and the other dinghy depending on the work to be done (setting out poles for nets and/or traps, emptying gear, fishing for bait etc.). Also the fishery regulation system has for many years linked the right to fish a certain amount of fish to the vessel. So some fishermen have additional vessels, which are not used as separate production units, in order to keep the right to fish and ensure their income. Though all quotas today no longer are stuck to the physical vessel there are still a number of “additional or secondary” vessels registered, and some of the landings of fish are registered on those vessels. Also 19 fishermen with no vessels had (small) landings of fish.

In order to calculate the production for each fisherman and fishing firm it is necessary to identify the production unit that has been in use for the year. In most cases that is a single vessel, which has been owned and used by the same fisherman the whole year. Another situation exists when a fisherman sometime during the year shifts vessel and carry on fishery with his crew from the other vessel, or if he some months uses two vessels simultaneously like fishermen using fixed nets and traps sometimes does. In those cases the production and other economic data for each part time of the year must be added up to form a complete operating year.

The Danish programme for collection of economic data covers all fishing activity for the year and includes both vessels that are registered from the start of the year as well as vessels that become registered during the year and commences fishery in the year. The population of fishing units (vessels) covers therefore the whole production in the fishing sector.

The number of inactive vessels in the text above is not the same as the number of inactive vessels in the Fleet Economic Report. The figures on inactive vessels in the text above include all entities (vessels ID + entry date + exit date) on the register without landings, but many of those may have been entered into the register with another vessel ID for another period of the year, and can have landings registered for that period. The true number of inactive vessels for 2014 is 518 vessels, as specified in the Fleet Economic Report

III.B Economic variables

Supra Region: Baltic Sea, North Sea and Eastern Arctic, and North Arctic.

The total volume of the Danish fishery in 2014 was 741,855 tonnes to a value of 379 million EUR. The main part of the fishery takes place in the North Sea (218 million EUR), Skagerrak/Kattegat (78 million EUR), and the Baltic Sea (33 million EUR), but 10 vessels had also been fishing in the Norwegian Sea (11 million EUR) and the waters west of Scotland (23 million EUR) and west and south of Ireland (8 million EUR).

III.B.1 Achievements: Results and deviation from NP proposal

Statistics Denmark receive the yearly extract from the Danish Fishing Fleet Register together with the registered logbook and sales note data at the beginning of April the year after the accounting year. This is when the data on the administrative registers has been checked and a freeze version of the data can be produced for statistical use. During April and May we combine these data to produce the population and the fleet segmentation for the account statistic for fishery. The accounts are sampled during the summer and all encountered errors between the register based population and the de facto real population are corrected in the process. In October the statistics is prepared based on the corrected final population. This is exactly as planned in the Danish NP. But every year we get a note on apparent errors saying: No data reported for 2014 (= the year before the reporting year) at national and fleet segment levels (recurring issue). We will never be able to report data on capacity and landings just two months after the end of the year, as the registered data is not ready to use before April, and it is necessary to combine and analyse the data to identify the population and make the correct segmentation.

We use a harmonized balanced accounting form to collect the economic data. The 2014 sample included 292 accounts, 51 per cent, of the 576 unit frame population. We simulate individual accounts for every unit in the population that is not in the sample. These simulations are done by selection of one to three of the sampled accounts that are valuated to be best possible replacement for the simulated unit, and calibrate the average of the 1 to 3 matching units to equal the registered revenue and of that unit.

The simulations are performed using a BANFF MASSIMPUTATION model in SAS. Donors are matched according to known registered data for catches on selected species, crew size, engine power and days at sea in Ices III and Ices IV.

III.B.2 Data quality: Results and deviation from NP proposal

The improved calculation model, where we simulate individual accounts for every unit in the population that is not in the sample, has now been in place for three years (2012-2014). As such we have now improved the program to calculate effort and the quantity and value of landings based on data from the administrative registers for all production units. In the 2016 Fleet Economic Report, covering the period 2008-2014, the data on effort and the quantity and value of landing has been revised for the years 2012-2013.

III.B.3 Follow-up on Regional and international recommendations

No action is needed.

III.B.4 Actions to avoid shortfalls

We are aware of another recurring issue about differences in the reported data at MS and FS levels for investment and for the variables 'variable costs' and 'other income'. These errors come from several manual corrections which have to be carried out on the sheets to be uploaded for the report. The problem is, that the JRC upload system does not allow for negative values on investment (totInvest) and other income (totOtherInc).

In the Danish Accounts system both purchase and sale investment goods are included in the investment, which of course can result in a negative value. Likewise the variable “Other income” can be negative. Other income include the following variables: Additional payments regarding production from earlier years (see directions) +/- Received/handed over amounts to cover landings by/for other vessels (pair-trawl) + Other fishery income + Leasing or hire out of vessels and other operative assets + Other sources, for instance salvage money.

Apparently the uploading system for the Aquaculture Economic Report does not reject negative values on investment and other income. We will contact JRC to ask for the possibility for negative values in the Fleet Economic upload system also.

III.C Metier-related variables

The Danish NP concern sampling schemes for four areas; the Baltic Sea (ICES areas III b-d), the North Sea (ICES areas IIIa, IV and VIId), d Eastern Arctic (ICES areas I and II) and North Atlantic (ICES areas V-XIV and NAFO areas).

DTU Aqua has used the AgriFish Agency databases and combined logbook data with the sales slip data and vessel register data and created a database; the DFAD. Here total annual commercial landings by métier can be provided by all species and areas, according to level 2, level 3, level 4, level 5 and level 6, of geographical disaggregation according to Appendix II of Commission Decision 2010/93/EC. The figures are based on all recorded landings stored in this database. The recorded landings in this database are census data.

Results of the sampling in 2015 in relation to what was planned are presented in tables III.C.3, III.C.4, and III.C.6. As the sampling for both the at sea and on-shore programs has changed since the reference years, the sampling frame codes (III.C.3 column H) have been updated accordantly to the new programs.The sampling achievements in 2015 were at a similar level compared to 2014, however the sampling design has changed since the reference years and can therefore for some metiers/ area and stocks have a large difference between the archived and applied sampling. Denmark has initiated work to improve the sampling design of the commercial sampling following the outcomes of ICES WKACCU, WKPRECISE, WKCATCH, WKPICS and SGPIDS. This outcome has since 2011 led to a gradually change from an ad-hoc sampling programme to a statistically sound sampling in the observer programme where trips/vessel are the primary sampling unit within some pre-defined fleet lists. The draw list is pre-defined to account of unique vessels based on the fishery the previous, indicating that the same vessel cannot be present in more than one list and the lists are therefore relatively broad to hold the main activity within a fleet group. In 2015 Denmark applied seven fleet lists for the observer programme. As the

vessels are randomly selected in a database based on last years fishery, large changes in fishing pattern between years can affect the sampling in a given year.

In 2014 the harbour sampling program was also changed from an ad-hoc quota sampling programme to a statistically sound sampling programme. The harbours were grouped in a list with small and large harbours and only harbours where 80% of the landings, trips and value for every stock , included in the sampling programme, are present within the sampling frame. Depending on the size of the harbour site (small or large) different effort was allocated to the harbour visit. As was the case for the observer programme the transition from one program to another is not finalised within one year and improvement in the harbour sampling program will be an ongoing process for the coming years. As an example it is not straight forward to follow the sale places, and to conduct a cost effective sampling programme it is of importance to locate places where the fish is sold in larger quantities and it is still possible to receive all correct information on fishing gear and area. A main overall reason for deviations from what was planned is that the sampling design is conducted on harbours sites (harbour * day) and fisheries (main fleets) and not on metiers and therefore the sampling by metier will be a post evaluation of the outcome in the sampling program. Also, to have a statistically sound sampling design, random sampling is one of the most important items, indicating that if sampling is random it is not always possible to target all events with the present effort. When sampling is conducted on shore; in harbours or at markets, all information on the metiers and fishing location are selected. However, the sampling scheme is not conducted by metier but by harbour and day and within a harbour and a given day species and sorting groups are selected. Therefore we cannot always assure that all metiers have been sampled or that we have encounter all stocks targeted in the given program at every sampling event. As the new system is selecting the vessels randomly, the logistics have become a bigger challenge as we have to travel more to Islands and enter the vessels from rather small ports. The numbers of different vessels selected for the observer program has increased with this system. However, it has at least in the first year been at the expense of numbers of trips conducted. The main part of the deviations in 2015 from the aim is caused by the logistic more challenging system and is expressed below on a metier basis and that we now are not “hunting” the fish but are having harbour and week as our primary sampling unit.

Baltic Sea (ICES areas III b-d)

III.C.1 Achievements: Results and deviation from NP proposal

Deviation from sampling on shore and at sea. The Danish sampling program is targeting vessels/ trips as the primary sampling unit this indicate that metier is not selected for in this system and we can therefore not guaranty that we will be able reach the planned numbers of trips proposed. However, the total numbers of conducted trips should be similar to the proposed number.

The effort allocation in the harbour sampling programs is visits of marked days by a given harbour. Therefore, the information on both numbers of fishing trips by metiers and subareas from the harbours sampling program given in table 3.III.C are number of fishing trips sampled per domain. Denmark sample boxes and not fishing trips at the auctions, boxes per size sorting and stock. This means that by change every single box sampled at a market*day could be from different fishing trips.

Detailed information on deviations by metier can be found in table 3.III.C

III.C.2 Data quality: results and deviation from NP proposal

One of the main quality improvement with a sampling schemes based on statistical principles is that it enables us to calculate unbiased estimators e.g. catch at age and discard amount. The sampling program may still be biased due to refusal, but refusals are now tracked and it is therefore possible to check for biases by comparing the VMS tracks and logbook information between vessels were observers are welcome and vessels that refuses to bring observers. In the former program although bias was anticipated it was not possible to quantify the level.

The quality from the harbours sampling program is further checked by post evaluation of the coverage where the sampled landings (red dots) by ICES square is compared with the landings per square from the logbooks (blue squares) in figures 1 and 2. From this figure it can be seen that cod is relatively well covered in the sampling program except in an area just east of Bornholm. Here the cod are landed in Poland and not sampled in the Danish sampling program.

Refusal rates are collected according to the recommendations in the SGPIDS III report and the answers are divided in 6 categories; No contact, no contact information, not available, observer decline, industry decline and sampled.

Refusal rate from the trawler fleet list in the eastern Baltic has increased in 2015 to 28% compared to the later years 16-18%. The reason for the increase could be caused the landing obligation. An increase in refusal rate could off course have an effect on the estimate.

In the western Baltic Sea the refusal rate increased from 16 to 21% in 2015.

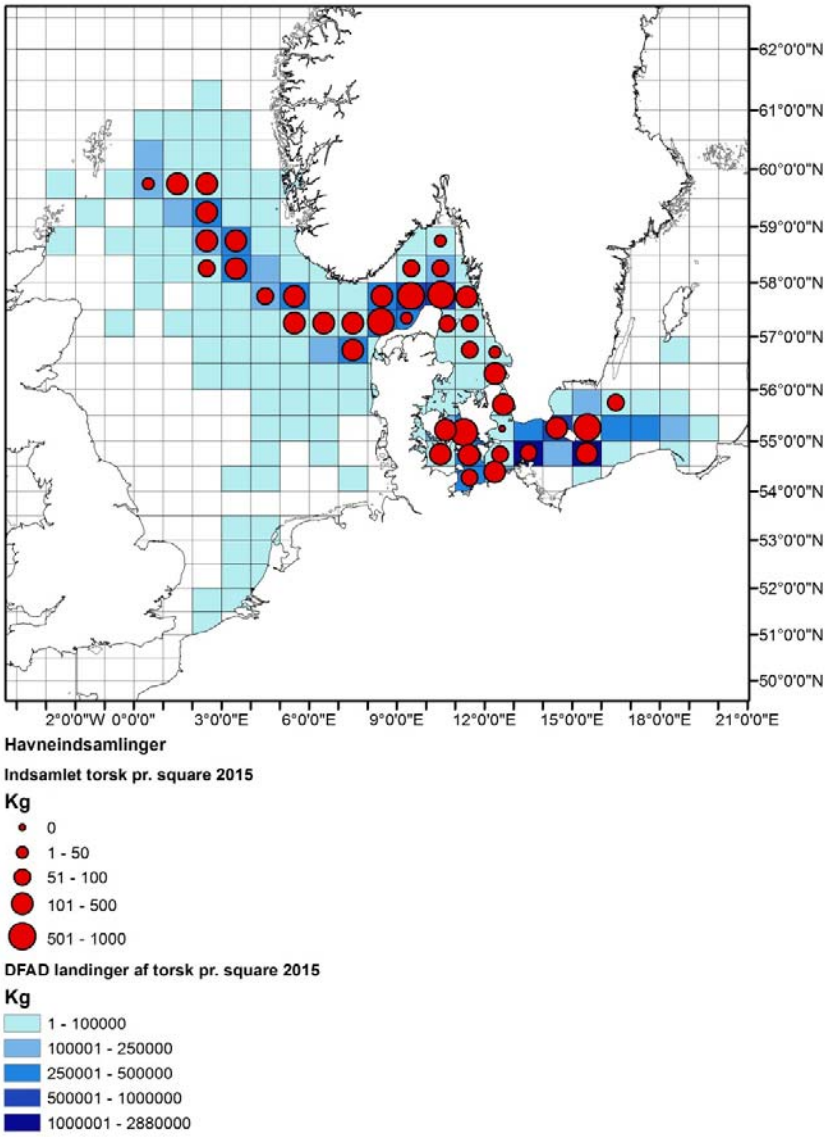


Figure 1. Danish landings of cod by ICES square (blue squares) compared with the amount (in kg) of sampled cod by square (red dots).

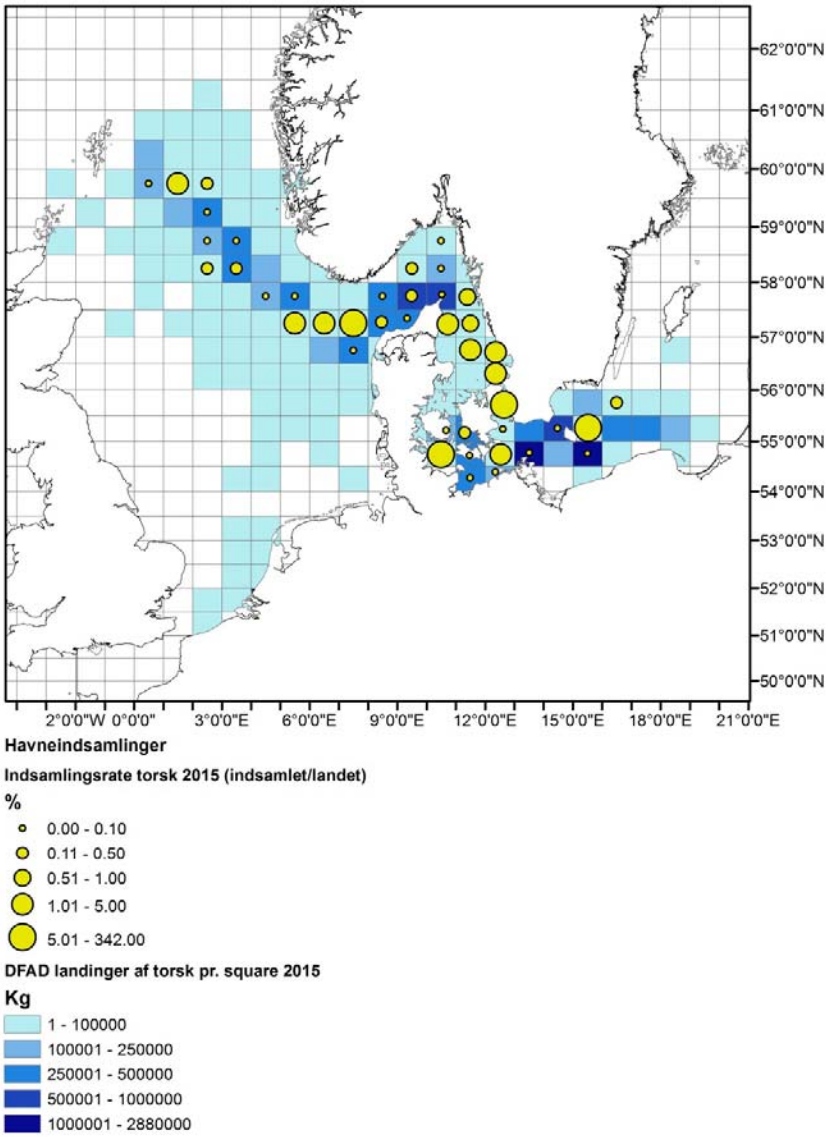


Figure 2. This figure shows the relative distribution of the harbour samples (yellow dots) compared to the landings (blue).

III.C.3 Follow-up of regional and international recommendations

Recommendations relevant to this chapter are listed in in table II.B.2.

III.C.4 Actions to avoid shortfalls

In 2010-2011 a proper statistically sound sampling frame was developed and implemented in the observer program. This has reduced some of the problems mentioned in ICES WKACCU and WKPRECISE and latest WKPICS in 2012 as to avoid shortfalls. However, the new sampling program has in practice been more difficult to implement than expected mainly, due to the increased logistics problems that arise when vessels are randomly selected from a database (vessels with homeports on small islands, skippers that we do not normally have contact with ect.). However, some of the obvious pitfalls are avoided, such as only selecting a well-known part of the fleet, to have a clear procedure on how to follow up on refusal and to collect this information. Furthermore Denmark is now weighing the possibility of selecting a vessel equally although vessels below 10 meters have been excluded. The main reasons to exclude these vessels are the lack of logbooks and thereby it is very difficult to make sure that they are targeting a fishery we would like to monitor. The larges advances with the system is the increased number of vessels included in the sampling as well as a documentations of the refusals. The numbers of vessels have increased by 30% since the change of the sampling programme and as it has been shown in other studies that the main part of the uncertainties is between vessels, it makes good sense to increase the number of ships to be sampled. Another reason for inconsistencies between planned no of trips and achieved number is the dynamic in the fishery making it difficult to predict spatial and temporal fishing patterns for some metiers at the time of planning the NP. However, with the new system we try to follow the fishery by calling the selected fisherman and if he is going on a trip, we are obliged to sample according to the DCF, we will conduct the trip although it is conducted in another area and with another metier. The improved Danish observer sampling program, in place since 2011, has incorporated refusal rates from the random selected fishermen giving a much better overview of the bias in the sampling program in connection to the sampling population and the coverage of this. In 2012 and 2013 some smaller improvements have been incorporated in the designs to make it more operational and user-friendly. The design has also been presented in international working groups (WKPICS I and II and SGPIDS III) where standardization towards other MS designs has been incorporated.

To decrease the refusal rates in the different frames effort has been taken place in 2015 to inform the fishermen on how the data is being used this has been conducted on local annual general meeting (AGM) in the fishermens organisations and to meetings in a regional context.

In 2014 Denmark implemented a new harbour sampling program also probability based. The new harbour sampling design have optimised where to target the landed fish, however this have introduced some new challenges with lesser quality information in some sampling sites in connection to area and gear used in the fishery. This needs to be improved and could lead to a change in some of the sampling sites due to the low information quality.

North Sea (ICES areas IIIa, IV and VIId)

III.C.1 Achievements: Results and deviation from NP proposal

For more general deviations and results see text under the Baltic Sea. For detailed information on deviations by metier can be found in table 3.III.C

III.C.2 Data quality: results and deviation from NP proposal

As the sampling design implemented in Denmark in 2011 for the observer program and 2014 for the harbours sampling is in depended of area. The same issues from the Baltic Sea are relevant for the North Sea and East Artic.

Refusal rates are collected according to the recommendations in the SGPIDS III report and the answers are divided in 6 categories; No contact, no contact information, not available, observer decline, industry decline and sampled.

Refusal rate from the beam trawler fleet list in the North Sea is relatively low and was recorded to 13% in 2015 the same level as in 2014. For the combined trawler and Danish Seine list in the North Sea the refusal rate in 2015 was recorded to be 14% higher than last year's 10% but in line with the 2013 level. The refusal rate for the combined trawlers and Danish Seine in Skagerrak (IIIaN) has decreased from very high levels 2013 at 43% to 34% in 2014 and 29% in 2015.

III.C.3 Follow-up of regional and international recommendations

Recommendations relevant to this chapter are listed in in table II.B.2.

III.C.4 Actions to avoid shortfalls

As the sampling programme is developed for the hole area the actions to avoid shortfalls are similar to the Baltic Sea.

North Atlantic (ICES areas V-XIV and NAFO areas)

III.C.1 Achievements: Results and deviation from NP proposal

Detailed information on deviations by metier can be found in table 3.III.C

III.C.2 Data quality: results and deviation from NP proposal

See Baltic section

III.C.3 Follow-up of regional and international recommendations

Recommendations relevant to this chapter are listed in in table II.B.2.

III.C.4 Actions to avoid shortfalls

See under Baltic Sea

III.D Biological - Recreational fisheries

In order to estimate the quarterly harvest of cod, eel, sea trout and since 2015 sharks (fish caught and kept) by Danish recreational fisheries a recall based interview survey has since 2009 been conducted by DTU Aqua in cooperation with Statistics Denmark. To estimate 2015 data two interview surveys were conducted in August 2015 and January 2015 respectively.

Statistics Denmark and DTU Aqua developed a concept for a combined telephone and internet survey for the Danish recreational fishery. To estimate the seasonal and annual fluctuations in the catches the survey is conducted on a biannually basis every year. Since 2013 the interview survey has been exclusively web based.

For 2015 two surveys were conducted resulting in recall periods on 6 - 7 months. None of the surveys included catches of Baltic salmon, since it was considered a fishery not suited for the sampling approach used in present survey. This is simply because the fraction of anglers practicing this fishery is believed to be very low. The surveys have since 2010 also included the catches of sea trout in marine waters. Since 2015, second half cathes of sharks have been included in the survey.

The interview survey presented in this report was separated into two different phases with their own questionnaires and targeting two different group of respondents: 1) The Omnibus survey targeting a random subsample of Danish residents between 16 and 74 years of age and 2) Annual license holders. The omnibus was conducted four times in 2009 and 2010 with similar results. It is assumed that the results from this interview are unlikely to change much from year to year. The license list survey is conducted biannually covering the period from January to June and July to December.

Anglers - domestic as well as tourists - between 18 and 65 years of age have to purchase a license for a year, week or day. All passive gear fishers have to have an annual license and you are not allowed to fish before the age of 12. The license is personal and non-transferable.

The results for 2015 will also be presented in the ICES group for recreational fisheries surveys WGRFS where data will be published.

The Baltic Sea and the North Sea and Eastern Arctic

III.D.1 Achievements: results and deviation from NP proposal

For the Baltic Sea, salmon, shark, eel and cod are to be reported and for the North Sea only cod, shark and eel. Denmark has provided a report with the recreational harvest estimated for 2015 which has been delivered to the relevant ICES working groups (WGBFAS, WGNSSK and WGBAST) for them to include in the assessments. However, as the survey has only been conducted for a few years it has not yet been possible for the WG to use the data directly in assessment. It was however suggested to include the cod data in the WGBFAS in 2016. However, an implementation of the recreational fisheries data in the stock assessment is only feasible if the estimates from the interview based recall survey is verified. This verification and potential adjustment of data is carried out in 2016 and 2017 using on-site surveys.

Table 1. Recreational fisheries quarterly cod harvest 2015 for different types of gear and license type.

Gear Type	Period	Baltic Sea harvest (tons)	The North Sea and Eastern Arctic harvest (tons)
Fykenets	1. Jan - Mar	7.9	2.0
Fykenets	2. Apr - Jun	2.2	1.0
Fykenets	3. Jul - Sep	11.3	1.9
Fykenets	4. Oct - Dec	3.7	1.4
Fykenets	Total	25.1	6.4
Gillnets	1. Jan - Mar	31.0	15.1
Gillnets	2. Apr - Jun	13.4	8.7
Gillnets	3. Jul - Sep	27.7	21.6
Gillnets	4. Oct - Dec	14.5	10.6
Gillnets	Total	86.6	55.9
Angling (passive gear licence)	1. Jan - Mar	45.0	39.8
Angling (passive gear licence)	2. Apr - Jun	26.9	52.9
Angling (passive gear licence)	3. Jul - Sep	40.5	54.0
Angling (passive gear licence)	4. Oct - Dec	16.9	6.0
Angling (passive gear licence)	Total	129.2	152.7
Angling (angling licence)	1. Jan - Mar	390.1	114.0
Angling (angling licence)	2. Apr - Jun	153.7	210.9
Angling (angling licence)	3. Jul - Sep	326.2	210.3
Angling (angling licence)	4. Oct - Dec	160.9	27.4
Angling (angling licence)	Total	1030.9	562.5
Passive gear total	Angling	1160.1	715.2
Angling total	Passive Gear	111.6	62.2
Grand total	Total	1271.8	777.4

Table 2. Recreational fisheries quarterly eel harvest for 2015.

Gear type	Period	Baltic Sea harvest (tons)	The North Sea and Eastern Arctic harvest (tons)
Fykenets	1. Jan - Mar	5.95	3.15
Fykenets	2. Apr - Jun	3.72	1.72
Fykenets	3. Jul - Sep	46.76	17.52
Fykenets	4. Oct - Dec	14.73	1.42
Grand total	Total	71.16	23.81

Table 3. Recreational fisheries quarterly seatrout harvest 2015 for different types of gear and license type.

Gear type	Period	Baltic Sea harvest (tons)	The North Sea and Eastern Arctic harvest (tons)
Fykenets	1. Jan - Mar	0.5	0.6
Fykenets	2. Apr - Jun	0.2	0.2
Fykenets	3. Jul - Sep	3.0	0.6
Fykenets	4. Oct - Dec	0.0	0.2
Fykenets	Total	3.7	1.6
Gillnets	1. Jan - Mar	8.2	7.0
Gillnets	2. Apr - Jun	3.1	7.9
Gillnets	3. Jul - Sep	17.2	26.0
Gillnets	4. Oct - Dec	9.5	4.9
Gillnets	Total	38.0	45.8
Angling (passive gear licence)	1. Jan - Mar	12.6	2.7
Angling (passive gear licence)	2. Apr - Jun	8.3	4.0
Angling (passive gear licence)	3. Jul - Sep	6.2	7.6
Angling (passive gear licence)	4. Oct - Dec	2.7	2.3
Angling (passive gear licence)	Total	29.8	16.7
Angling (angling licence)	1. Jan - Mar	106.1	27.8
Angling (angling licence)	2. Apr - Jun	86.3	28.8
Angling (angling licence)	3. Jul - Sep	96.3	46.7
Angling (angling licence)	4. Oct - Dec	35.6	19.3
Angling (angling licence)	Total	324.2	122.6
Passive gear total	Angling	354.0	139.3
Angling total	Passive Gear	41.7	47.5
Grand total	Total	395.7	186.7

The majority of recreational fishers in Denmark are occasional anglers using private boats or fishing from piers or using waders along the Danish coasts. A survey conducted by Bohn & Roth (1997) showed that around 1/3 of all recreational fishers were members of an association. In Denmark there are several associations for recreational fishers, with three dominant associations active in advisory committees to the government. These are the Danish Anglers' Association, the Danish Amateur Fishers' Association and the Danish Recreational Fishers' Organization.

Sharks were included on a less comprehensive basis in the 2015 survey as no recreational fisheries are targeting sharks and out of more than 5000 respondents only 5 sharks were reported caught in the North Sea and Eastern Arctic.

Salmon was included in the survey in 2015, but as with sharks to get an indication of respondents participating in this fishery, as it was considered that the subsampling of the target frame used in the recall survey doesn't yield enough respondents. The marine recreational salmon fishery is limited to the Baltic Sea where the majority of the catches most likely origin from the trolling fishery with relatively few participants compared to other types of recreational fisheries. A new method (on-site survey) giving more detailed information from the Salmon fishery in the Baltic is being developed.

Salmon in the Baltic

The Danish recreational fishery for salmon is increasing in popularity, as catches have been increasing in recent years and the activity is further promoted by popular fishing tournaments. It is especially popular around the island Bornholm, but fishing also takes place further west in the Baltic Sea. The recreational fishery is primarily carried out by trolling from small boats and vessels. Some small harbours on the north and east of the island of Bornholm have specialized on servicing the trolling fishery.

The fishing season starts in September and ends in May. Both Danish nationals and foreign anglers attend the fishery, either for regular private fishing trips or as participants in angling competitions. In addition to angling, a traditional non-commercial long-line fishery with only a few hooks is carried out by locals part of the year around the island Bornholm.

Trolling: The official number of recreational caught salmon by trolling boats is 3000 per year (ICES, 2014). This information is based on data collected from larger trolling fishing competitions in the spring period and information on effort in the western part of the Baltic. More than 75 % of the total catches taken by the Danish trolling fishers were registered in three competitions. Though these competitions are very popular the 3000 salmon which is estimated to be caught yearly by trolling fishers seems to be an underestimate. A new survey aiming to estimate the yearly salmon catch in the trolling fishery for salmon is being launched in 2016.

Recreational long-line fishing: The yearly catch is estimated to be 500 salmon which should also be taken with some caution as no catches are reported at all.

The preliminary total number of Danish recreational caught salmon in the Baltic estimated using data from the recall survey is around 10.500. The number is estimated by extrapolating catches from 36 respondents to population level and hence should be interpreted with caution.

III.D.2 Data quality: results and deviation from NP proposal

The recall survey has been reviewed twice by the ICES group for recreational fisheries surveys WGRFS in 2014 and 2015 respectively and the conclusion was that data was suitable for implementation in assessment work if supplemental data and verification of data is collected. The data for 2015 is available as quarterly weight of catch for cod, seatrout and eel with corresponding RSE values.

III.D.3 Follow-up of regional and international recommendations

Recommendations relevant to this chapter are listed in in table II.B.2.

III.D.4 Actions to avoid shortfalls

Since 2009 Denmark has initiated a survey for sampling catch and effort data on the recreational fishery and it has been conducted biannually since 2010. In 2010 the survey was expanded to sea trout. However, the same level of knowledge has not been achieved for Salmon and a more statistical sound method to sample this fishery has to be developed.

III.E Biological - stock-related variables

To get catch-in-numbers (CANUM) and weight-in-catch (WECA) by age group, sampling of the landings and discards is undertaken. Although the landing obligation was initiated in 2015 for the Baltic area (cod and salmon) and for all pelagic the observer program has been maintained to ensure that the biological information on the discard fragment would still be obtained. For pelagic stocks simple random sampling is undertaken in land. Here an unsorted sample is taken by the control sent to DTU-Aqua and analysed at the institute. This sampling strategy is the case for sprat, sandell, herring, boarfish, and Norway pout. For sand-ell, sprat and Norway pout the sampling is supplemented by a self-sampling program sampling haul by haul and frozen directly. For all species landed by sorting groups another strategy is applied; A fixed number of fish boxes by selected species are sampled randomly within market size category (if sorted) /unit (unit =harbour, time). All individuals in a sample are analyzed according to length, weight and age. Sampling strategy on surveys and onboard fishing vessels differs from market sampling and was performed as follows all individuals (or a sub sample) were length stratified sampled by species and a fixed number per length class was sampled for age and weight. For stocks sampled on surveys and onboard fishing vessels, the length can be given an age by using an Age-Length-Key. Maturity data is only estimated on scientific surveys to achieve a higher expertise, the correct time of year and to be able to get non gutted fish.

International survey manuals give guidelines on number of individuals / length class to be sampled for age, sex and maturity. These were followed and the actual sampled number is therefore dependent on the amount of catch.

The Baltic Sea (ICES areas IIIb-d)

III.E.1 Achievements: results and deviation from NP proposal

All stocks sampled during 2015 for biological variables, age, length, weight, sex and sexual maturity are listed in table III.E.3. The variables are collected from different sources like survey, market or sea sampling and sampling strategy differs. For most stocks the sampling sources are listed and the results presented in separate rows. In table III.E.3 in the NP most consume species have listed survey and harbour sampling as data sources however for most of the consume species sea sampling should also have been listed as data source.

Detailed information on the deviations can be found in III.E.3.

III.E.3 Follow-up of regional and international recommendations

Recommendations relevant to this chapter are listed in in table II.B.2.

III.E.4 Actions to avoid shortfalls

It is sometimes challenging to archive the correct level for sex and maturity. This is partly due to the fact that maturity is only measured at surveys (and often only in the 1st quarter survey – spawning time) and it can be challenging to plan exactly how many fish are caught during the survey.

Denmark has according to the guidelines outlined in the WGPICS1-3, SGPIDS1-3 and PGCCDBS developed and improved our sampling strategy in the national programs to be a random statistical sound sampling. This indicate that all vessels selected for commercial sampling are selected in a random way and that the responses are registered. For our harbour sampling program the statistically random sampling program have first been developed recently.

For 2 stocks, the sole and the flounders extra effort has in 2016 been planned to increase the sampling level of fish. For sole the landings are so small that it has been very difficult the sample enough fish in the random harbour sampling program. Already last year this was noted and the program was changed for sole to be sampled at sea only (also the landed fraction). This did not improve the numbers of sampled fish. Therefore, a new initiative has been launch in 2016 with a sole a reference fleet. This will hopefully increase the sampling level. All flounders in the Baltic are sampled from observer trips to ensure a better sample size.

The North Sea and Eastern Arctic (ICES areas IIIa, IV and VIId)

III.E.1 Achievements: results and deviation from NP proposal

All stocks sampled during 2015 for biological variables, age, length, weight, sex and sexual maturity are listed in table III.E.3. The variables are collected from different sources like survey, market or sea sampling and sampling strategy differs. For most stocks the sampling sources are listed and the results presented in separate rows.

For detailed information on the deviations see III.E.3

Information on measured sharks and stingrays has like last year been included although not applied for as they are all appendix IV species. Both in surveys and at observer programs as by-catch they have been recorded.

III.E.2 Data quality: results and deviation from NP proposal

See Baltic section for general remarks. The numbers of unique vessels encountered with the new harbour sampling program has increased in the North Sea area but been at a similar level in the Baltic and inner Danish waters (figure 3) . The reason for the latter is partly due to decrease in numbers of active vessels in this area.

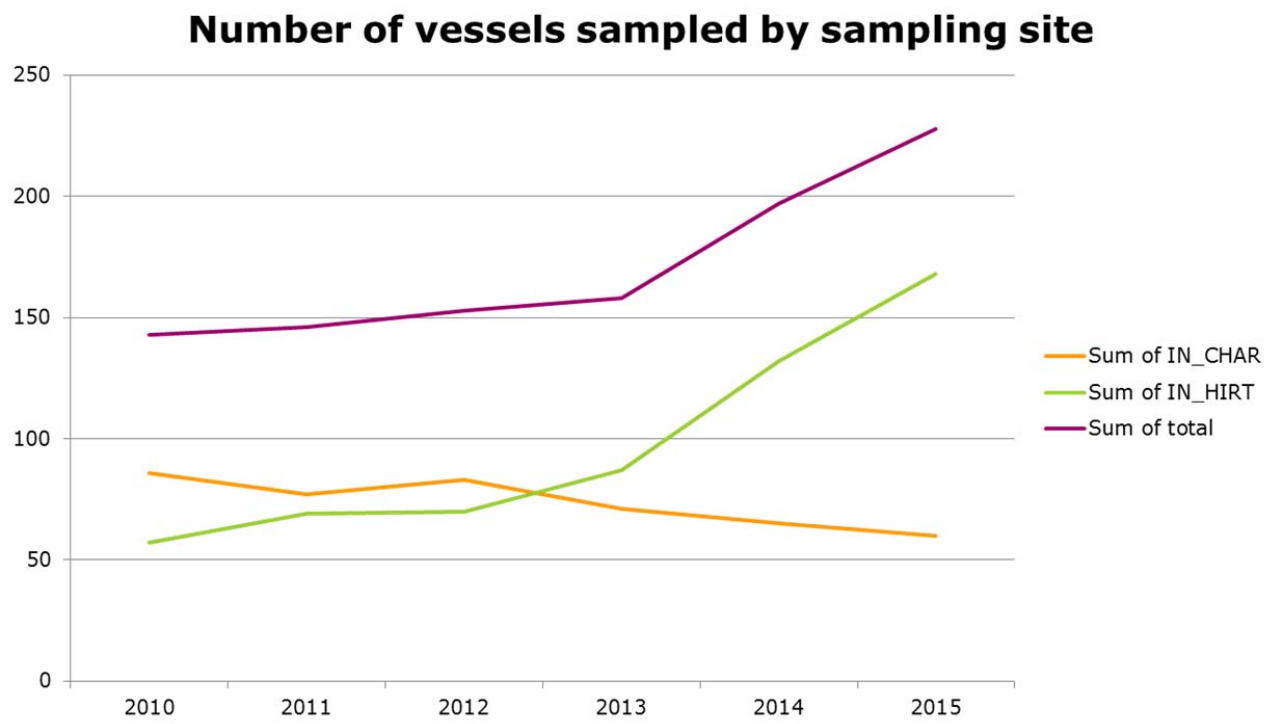


Figure 3. Numbers of vessels encountered at sampling sites by year. Purple line indicate the total numbers of unique vessels sampled, the green line is numbers of vessels sampled in the North Sea and Eastern Arctic, the orange line is in the Baltic sea.

III.E.3 Follow-up of regional and international recommendations

Recommendations relevant to this chapter are listed in in table II.B.2.

III.E.4 Actions to avoid shortfalls

See section III.E.4. Baltic

The North Atlantic (ICES areas V-XIV and NAFO areas)

III.E.1 Achievements: results and deviation from NP proposal

For detailed information see III.E.3

III.E.2 Data quality: results and deviation from NP proposal

III.E.3 Follow-up of regional and international recommendations

None of the recommendations are relevant to Denmark, as Denmark has only had a fishery for boar fish and blue whiting.

III.E.4 Actions to avoid shortfalls

None.

III.F Transversal variables

III.F.1 Capacity

III.F.1.1 Achievements: results and deviation from NP proposal
No shortfalls and/or deviations exist in relation to what was stated in the national programme.

III.F.1.2 Data quality: results and deviation from NP proposal
As the information in the Vessels Register is registered according to Regulation (EC) N° 2930/1986, N° 2090/1998 and N° 26/2004 and is updated daily data on fishing capacity is assumed to be correct

Therefore, no deviations exist in relation to what was stated in the national programme.

III.F.1.3 Actions to avoid shortfalls
No action is needed.

III.F.2 Effort

III.F.2.1 Achievements: results and deviation from NP proposal
If a vessel less than 10 m (or less than 8 m in the Baltic) is having at least one sales note at a calendar day, a fishing day is assumed and counted as one fishing day.

According to the Danish NP the following derogations have been asked:

'Hours fished': It is not possible to estimate 'Hours fished' since this is not recorded in the Danish logbooks and according to the EU logbook regulation it is not mandatory to record that. Therefore, Denmark request for derogation for recording and submitting "Hours fished".

The variables concerning numbers of gear ('Number of rigs', 'Number of fishing operations', 'Number of nets, length', 'Number of hook, number of lines', 'Number of pots, traps') and 'Soaking time' are not recorded in the Danish logbooks. According to the EU logbook regulation it is not mandatory to record this detailed information. Therefore, Denmark request for derogation for recording and submitting this information

As the Danish NP has been approved the above derogation has been granted.

Therefore, no deviations in relation to what was stated in the national programme exist.

III.F.2.2 Data quality: results and deviation from NP proposal
All logbook data is recorded in accordance with the provisions in the Control Regulation (Commission Regulation (EC) N° 404/2011). Even though effort from the national authorities is put into the improvement of the fishers logbook recordings errors might occur. The obligation to use e-logbook for all vessels above 12 meter in length will most likely improve the quality of the data. Still improvements can be made, but this needs a revision of the Control Regulation (Commission Regulation (EC) N° 404/2011).

III.F.2.3 Follow-up of regional and international recommendations
No relevant recommendations have been made about the collection of effort data.

III.F.2.4 Actions to avoid shortfalls
According to the Danish NP no shortfalls have occurred.

III.F.3 Landings

III.F.3.1 Achievements: results and deviation from NP proposal
In Denmark first hand fish buyer has to report to the authorities the amount of fish in kilo and value, the size grade, the quality, the area of origin, from whom the fish is bought from as well as other information. The volume of fish landed in Denmark has always been recorded using sales slips as sales slips information is 100% accurate. Logbook data is only used to determine which métier and statistical rectangle the amount in weight and value according to the individual sales slip should be related to. There have been no deviations in relation to what was stated in the national programme.

III.F.3.2 Data quality: results and deviation from NP proposal
All fish landed in Denmark is recorded, therefore census data. No deviations in relation to what was stated in the national programme exist.

III.F.3.3 Follow-up of regional and international recommendations
No related recommendations have been made about the collection of landings data.

III.F3.4 Actions to avoid shortfalls
As no shortfalls have happened no actions have to be made.

III G Research surveys at sea

III G 1 Achievements: results and deviation from NP proposal

In table III.G.1 an overview is given of the planned and achieved numbers of days at sea and the number of fishing hauls, transects length with acoustic data integration (Echo NM) or number of stations.

The biological data from surveys are stored in the national biological database “Fiskeline”. The BITS and IBTS survey data have been submitted to ICES and are stored in the ICES DATRAS database.

The acoustic data are stored in a national acoustic database for later submission to a data base at ICES which is currently under development.

MIK data are stored in a national database for later and have been submitted to the international coordinator.

CTD and other hydrographical and meteorological information are stored in national databases and the CTD profiles from the BITS, IBTS, Norwegian Sea and NS-Acoustic surveys and have been submitted to the ICES oceanographic database.

Detailed information on marine litter for the IBTS surveys has been submitted to the ICES DATRAS database.

Baltic International Trawl Survey (BITS)

The survey is carried out in both the first and fourth quarters with participation of the research vessel R/V DANA and the smaller research vessel R/V HAVFISKEN. The primary purpose of the part undertaken by R/V DANA is to estimate abundance indices for recruitment and stock abundance of the Baltic cod stocks. The second part undertaken by R/V HAVFISKEN provides in addition to cod also abundance indices for flatfish. The BITS survey is coordinated by the ICES Baltic International Fish Survey Working Group.

Types of data collected:

- Species composition
- Length and age measurements
- Samples of cod for estimating age composition, stomach content, sex ratios, maturity and growth parameters
- Information about litter
- Plankton and fish larval CPUE
- Acoustic information
- CTD: temperature, salinity and dissolved oxygen content

Achievements in 2015:

In the summary table below the number of planned and achieved days at sea and the number of valid fish hauls on R/V DANA and R/V HAVFISKEN are listed (Number of stations not fished due to bottom oxygen < 0.5 ml/l given in brackets).

Survey	Vessel	Planned days at sea	Achieved days at sea	Planned fish hauls	Achieved fish hauls
BITS 1st quarter	Dana	18	17	50	52 (0)
BITS 1st quarter (KASU I)	Havfisken	20	18	49	49
BITS 4th quarter	Dana	18	17	50	41 (8)
BITS 4th quarter (KASU II)	Havfisken	20	20	49	52

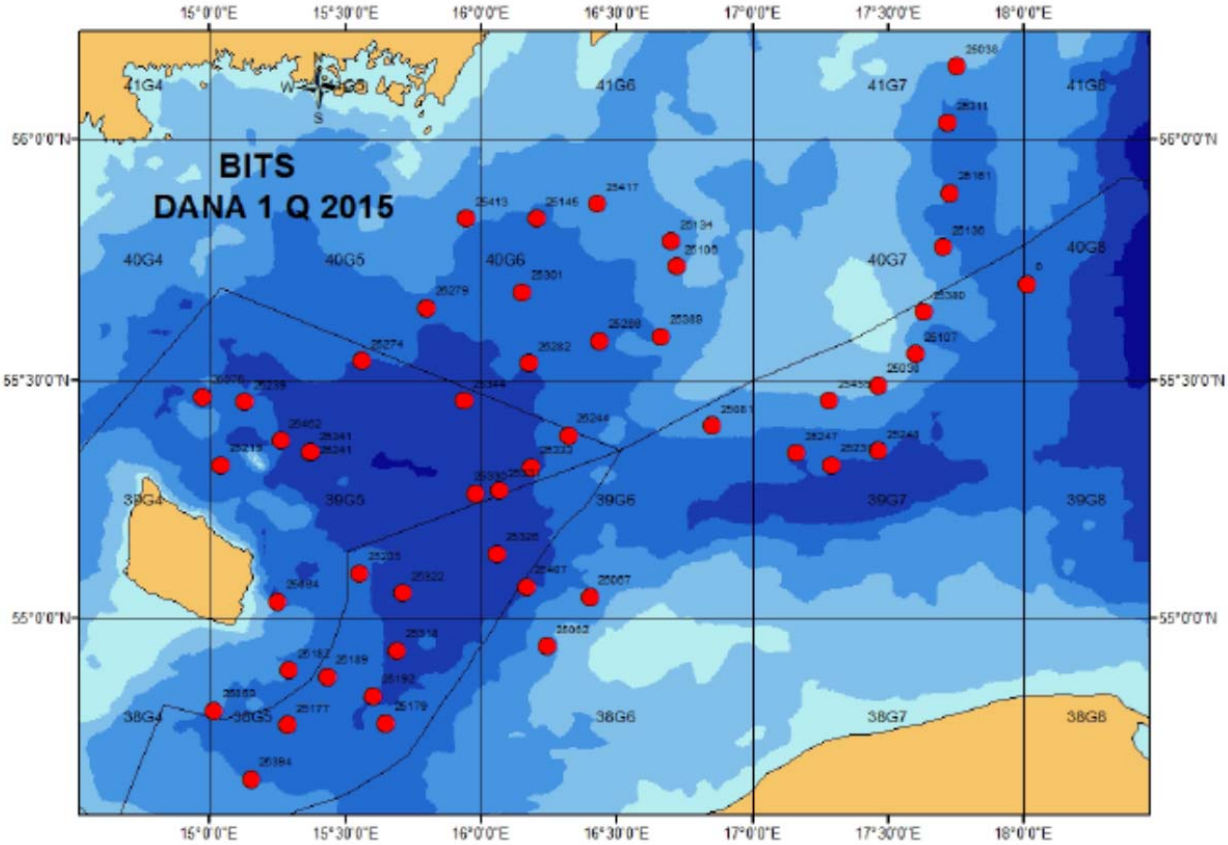
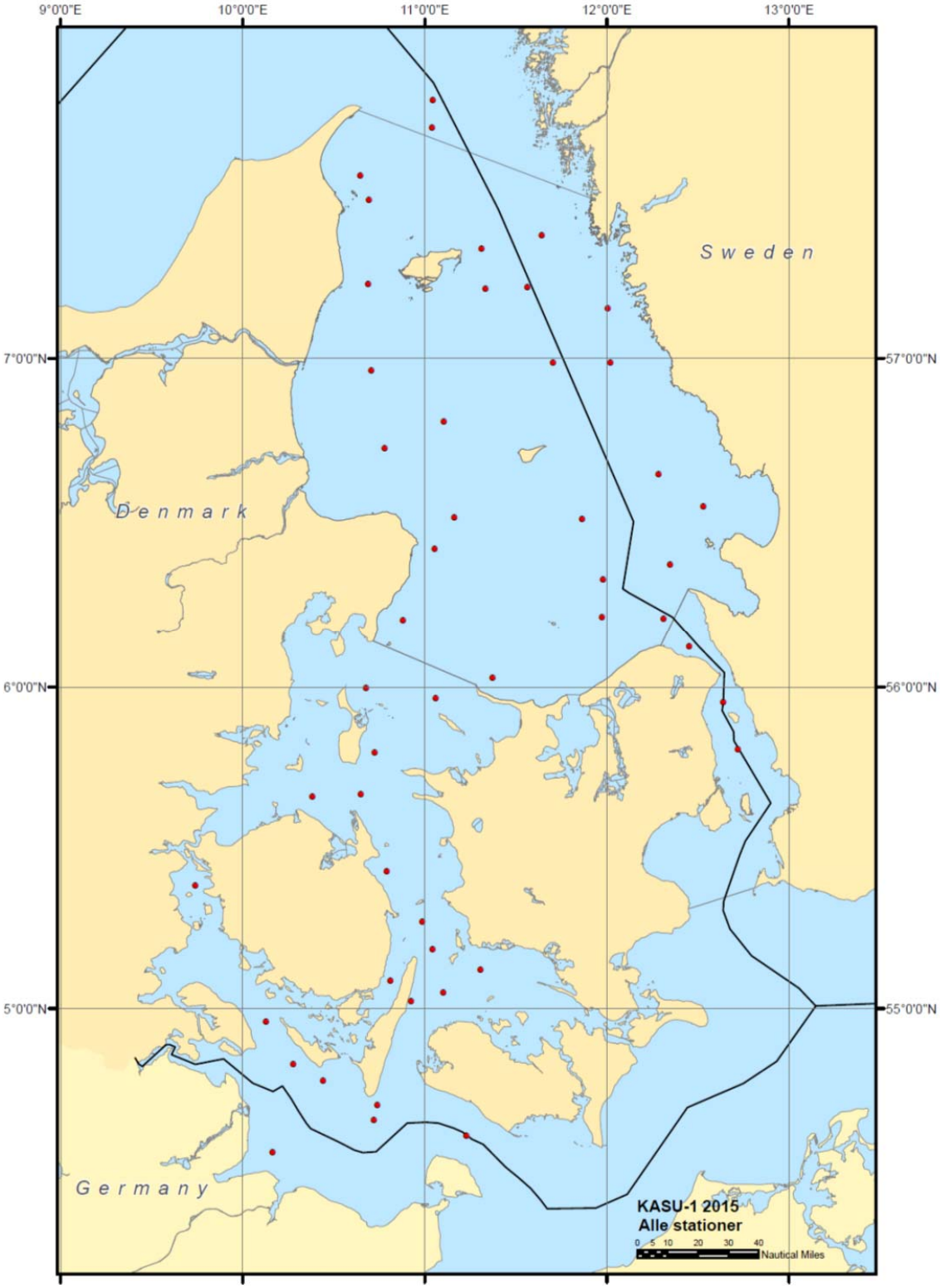


Figure III.G.1 Map showing BITS 1st quarter 2015 RV Dana bottom trawl and CTD positions.


9°0'0"E
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56°0'0"N
55°0'0"N
Sweden
Denmark
Germany
KASU-1 2015
Alle stationer
0 5 10 20 30 40
Nautical Miles

Figure III.G.2 Map showing BITS 1st quarter 2015 RV Havfisken achieved sampling positions (Bottom trawl and CTD).

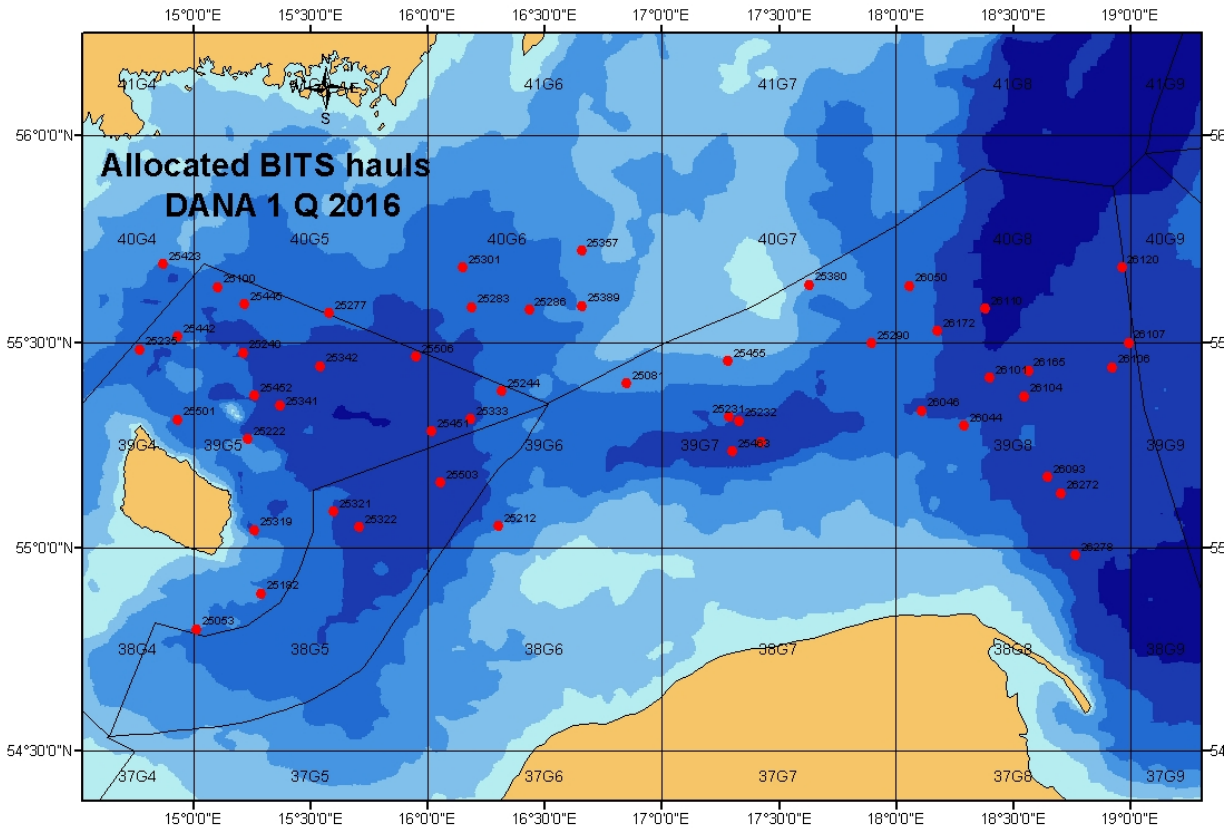


Figure III.G.3 Map showing BITS 4th quarter 2015 RV Dana bottom trawl and CTD positions.

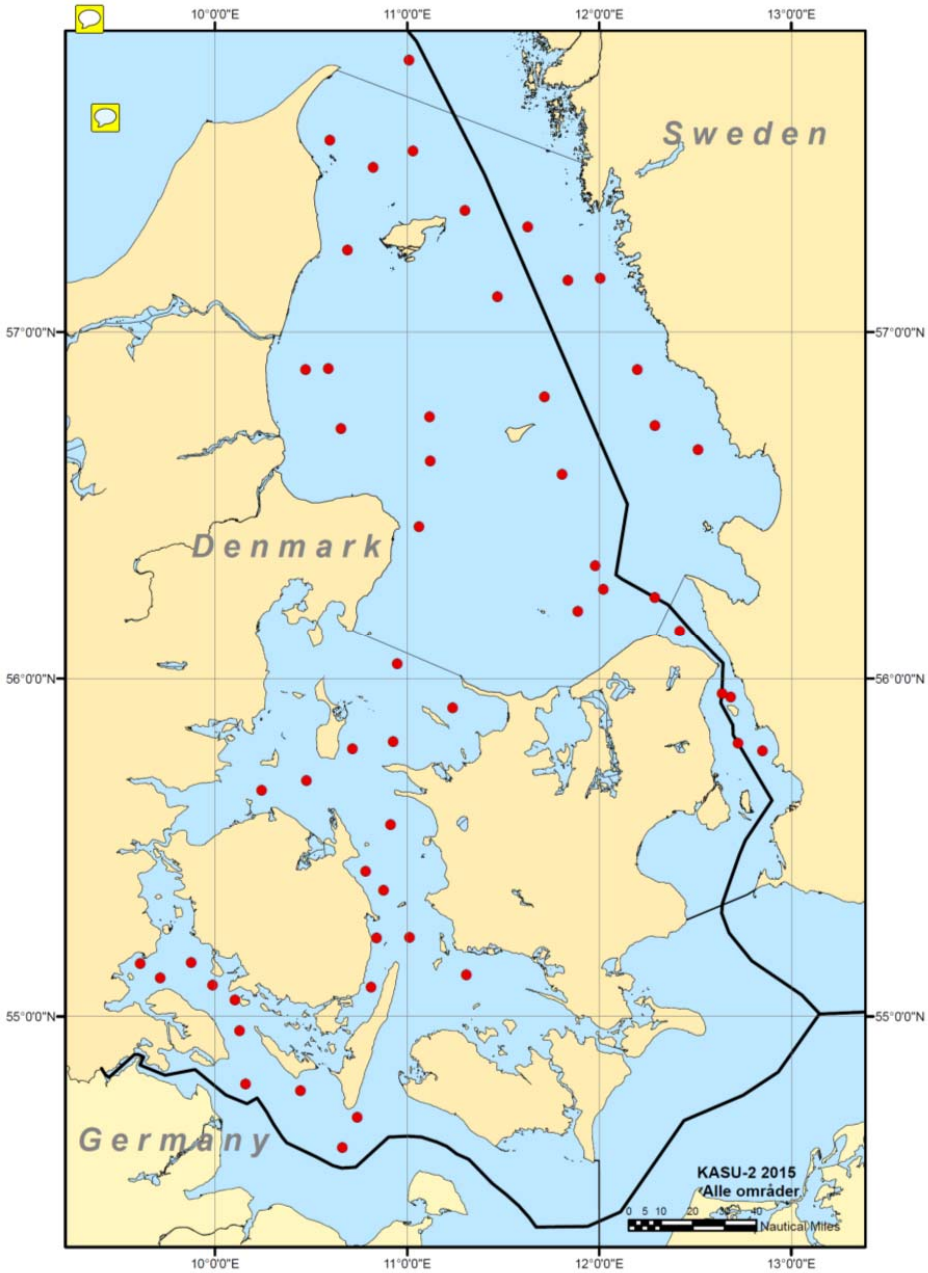


Figure III.G.4 Map showing BITS 4th quarter 2015 RV Havfisken achieved sampling positions (Bottom trawl and CTD).

International Bottom Trawl Survey (IBTS)

The purpose of the survey is to estimate abundance of commercial (cod, haddock, whiting, Norway pout, saithe, herring, sprat, and mackerel) and non-commercial fish species by means of bottom trawling and to collect otoliths of commercial species to assess abundance by age, in particular for the recruiting year classes in the North Sea, Skagerrak and Kattegat. It is a trawl survey using GOV-trawl. The IBTS survey is coordinated by the ICES International Bottom Trawl Survey Working Group.

Types of data collected:

- Species composition
- Length and age measurements
- MIK: plankton, fish larvae (only first quarter)
- CTD: temperature and salinity at fishing stations

RV Dana covered the area allocated to Denmark by the coordinator as planned in the 1st and 3rd quarter 2015 (Figs. III.G.5 and III.G.6).

The exceptional good weather conditions for this time of the year made it possible to complete the sampling program for the 1st quarter survey ahead the original schedule. In the 3r quarter survey several stations were fished with 15 min tow duration instead of the standard 30 min tow duration. This resulted in a higher number of stations that usual and was done following the decision of IBTSWG and the rectangle and tow duration allocation received from the 3Q NS-IBTS.

Achievements in 2015 (number of days at sea and number of valid trawl stations):

Survey	Vessel	Planned days at sea	Achieved days at sea	Planned fish hauls	Achieved fish hauls
IBTS 1st quarter	Dana	18	15	39	40
IBTS 3rd quarter	Dana	18	18	50	59

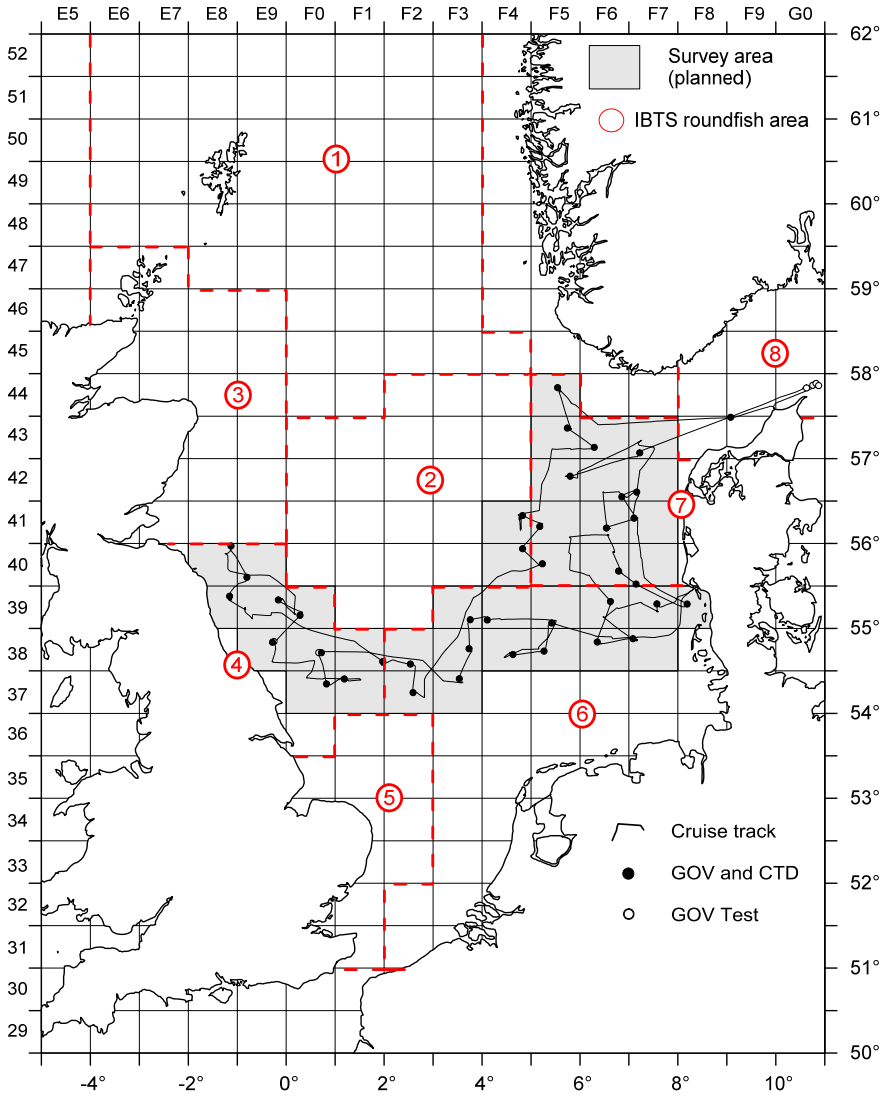


Figure III.G.5 Map showing IBTS 1st quarter 2015 RV Dana survey area, cruise track, valid GOV bottom trawl haul and CTD positions.

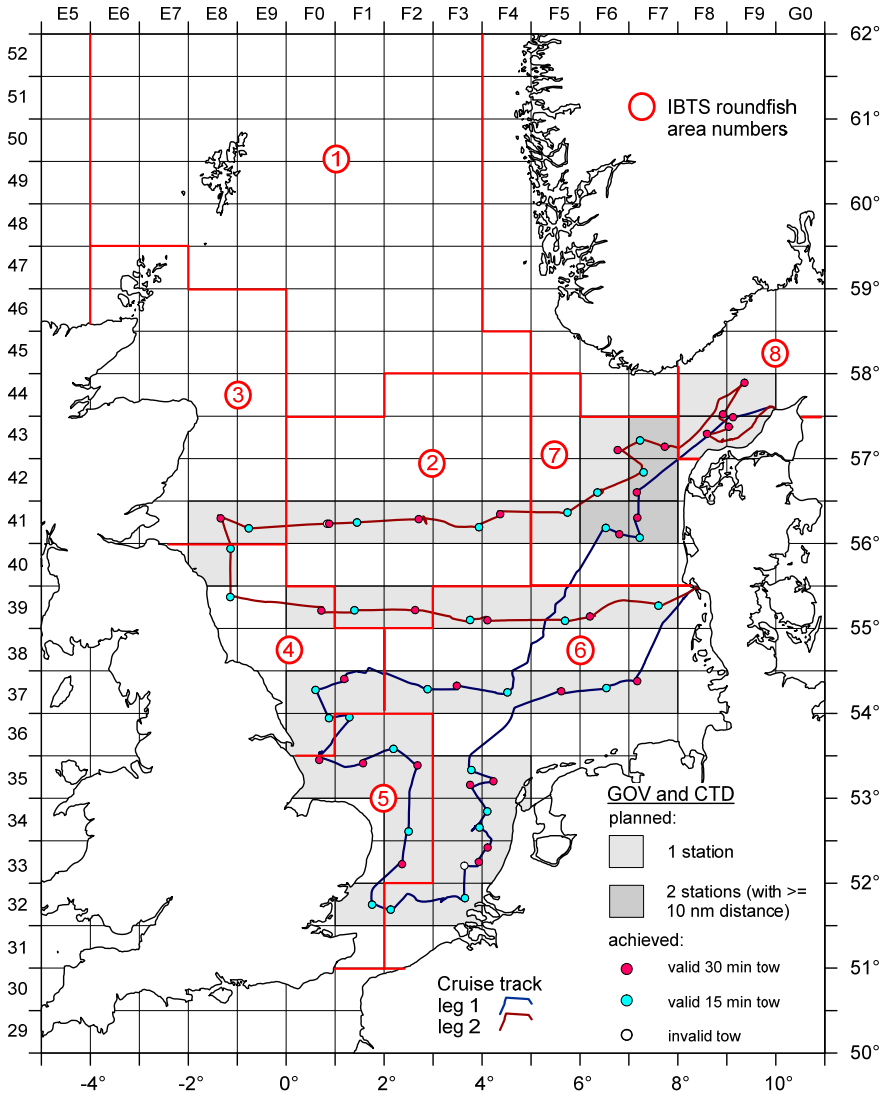


Figure III.G.6 Map showing IBTS 3rd quarter 2015 RV Dana survey area, cruise track, GOV bottom trawl haul and CTD positions.

International Ecosystem Survey in the Nordic Seas (IESNS, previously ASH)

This survey is carried out in order to investigate distribution and migrations of the Atlanto-Scandian herring, blue whiting and other pelagic fish and to produce a biomass index for herring and a recruitment index for blue whiting for the Working Group on Widely Distributed stocks (WGWIDE). Furthermore, hydrographic conditions and plankton abundance in the Norwegian Sea and adjacent waters are monitored in order to investigate distribution and migration of herring and other pelagic fishes are influenced by environmental conditions.
The survey was coordinated with Norway as an international survey with participation of Norway, Iceland, Faroe Islands and EU, where the Danish R/V Dana conducted the EU survey part. The survey is coordinated by the ICES Working Group of International Pelagic Surveys, WGIPS, (previously WG on North East Atlantic Pelagic Ecosystem Surveys, WGNAPES). The survey is carried out as a joint EU survey with participation of UK, Ireland, Netherlands, Germany, Sweden and Denmark.

Types of data collected:

- Acoustic data
- Biological data: species composition, length measurements
- For herring and blue whiting samples following parameters was measured on 50 individuals from each haul: length, weight, sex, maturity and age (from scales of herring and otoliths of blue whiting)
- Zooplankton using a WP2 net
- CTD: hydrographical data

Achievements in 2015:

- 30 days at sea (as planned incl. calibration; 20 effective survey days in the working area)
- 30 pelagic trawl hauls
- 36 CTD stations
- 35 WP2 stations
- 3320 Nm acoustic integration

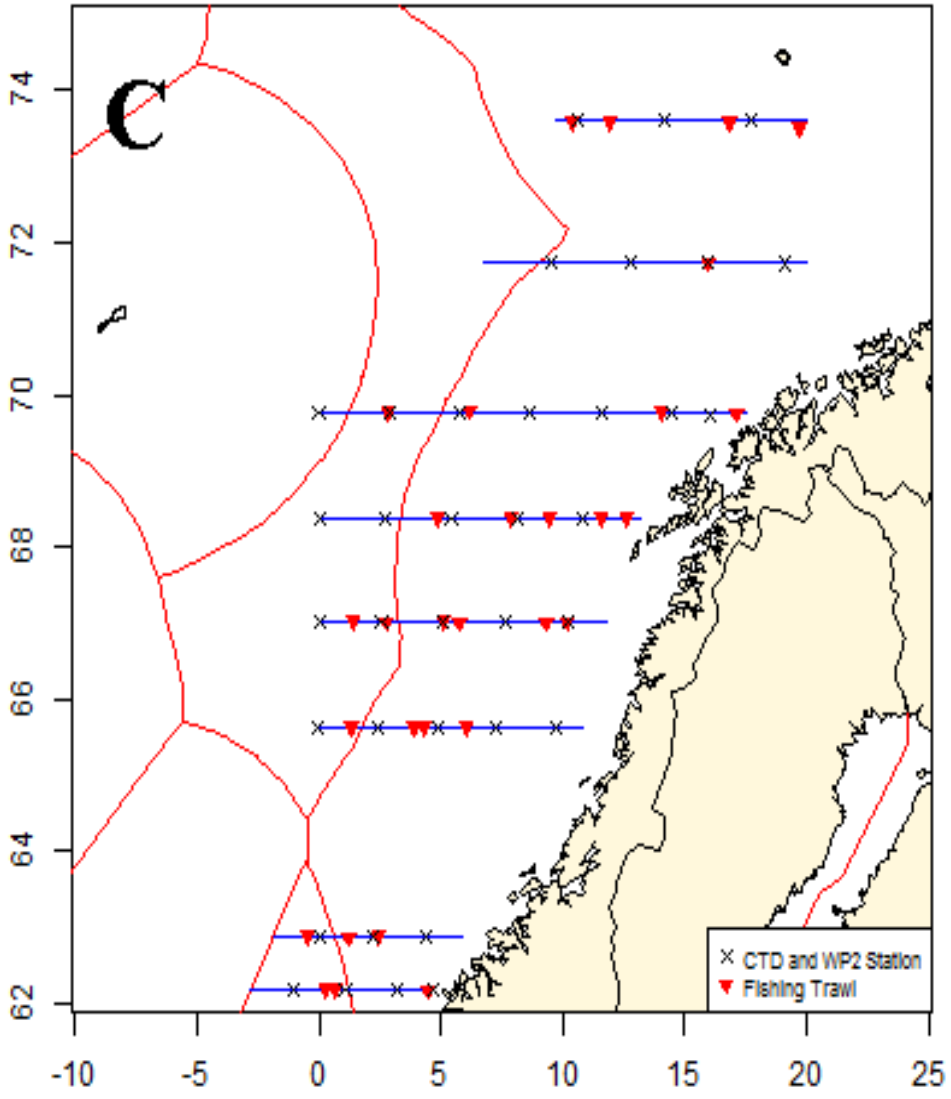


Figure III.G.7 Map showing the RV Dana IESNS 2015 sailed transects, pelagic trawl, CTD and WP2 stations.

International herring larvae survey (IHLS)

The sampling for the International herring larvae survey was done during the 1st quarter IBTS. 76 valid tows with the MIK (2 m ringnet) were conducted in 2015 (Fig. III.G.8).

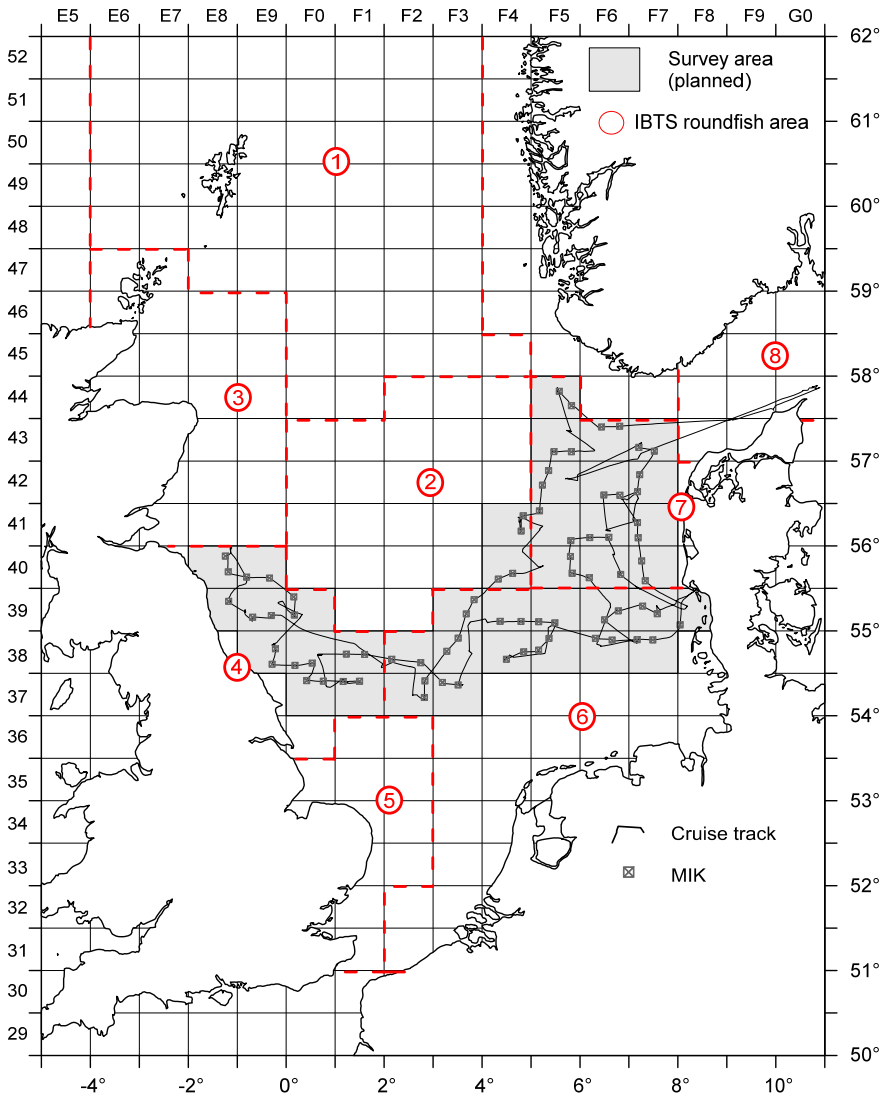


Figure III.G.8 Map showing IBTS first quarter 2015 RV Dana survey area, cruise track and MIK haul positions.

NS Herring Acoustic Survey (NHAS)

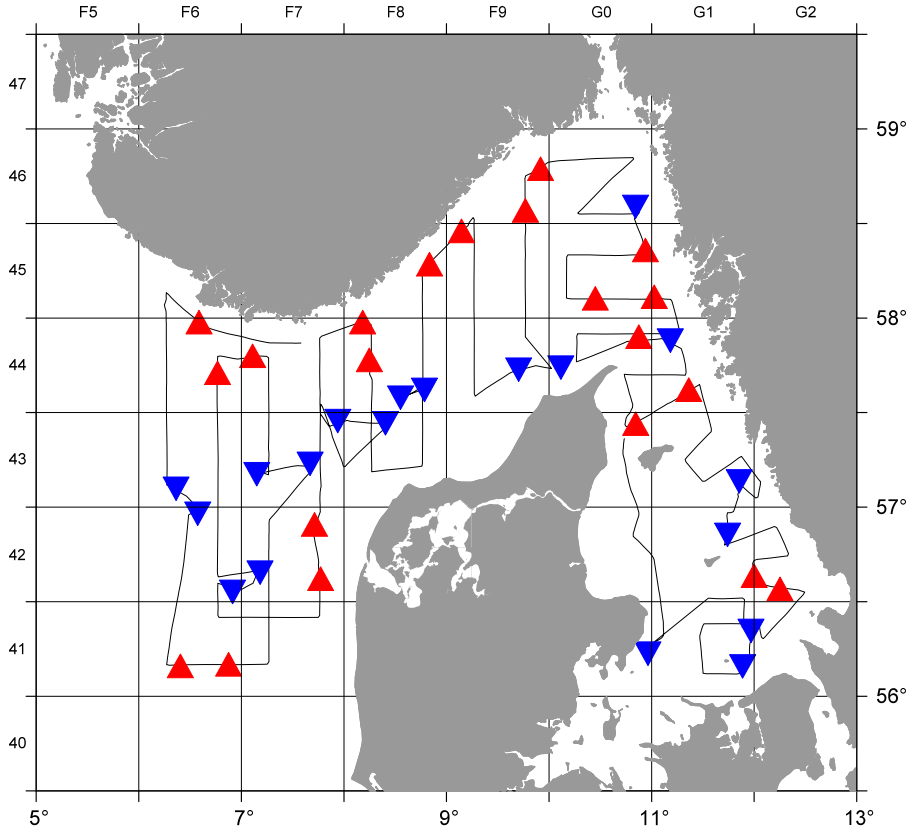
The purpose is to provide acoustic abundance estimates of herring and sprat in the North Sea (eastern part), Skagerrak and Kattegat. The survey is coordinated by the ICES Working Group for International Pelagic Surveys, WGIPS, and is a part of the international acoustic survey of the North Sea and adjacent areas.

Types of data collected:

- Acoustic data
- Biological data: species composition, length measurements, and for herring, sprat and mackerel: age and maturity measurements
- Hydrographical data using CTD
- Plankton samples using WP2 net

Achievements in 2014:

- 14 days at sea (as planned)
- 40 trawl hauls
- 46 CTD stations
- 22 WP2 stations
- 1801 Nm acoustic integration


F5
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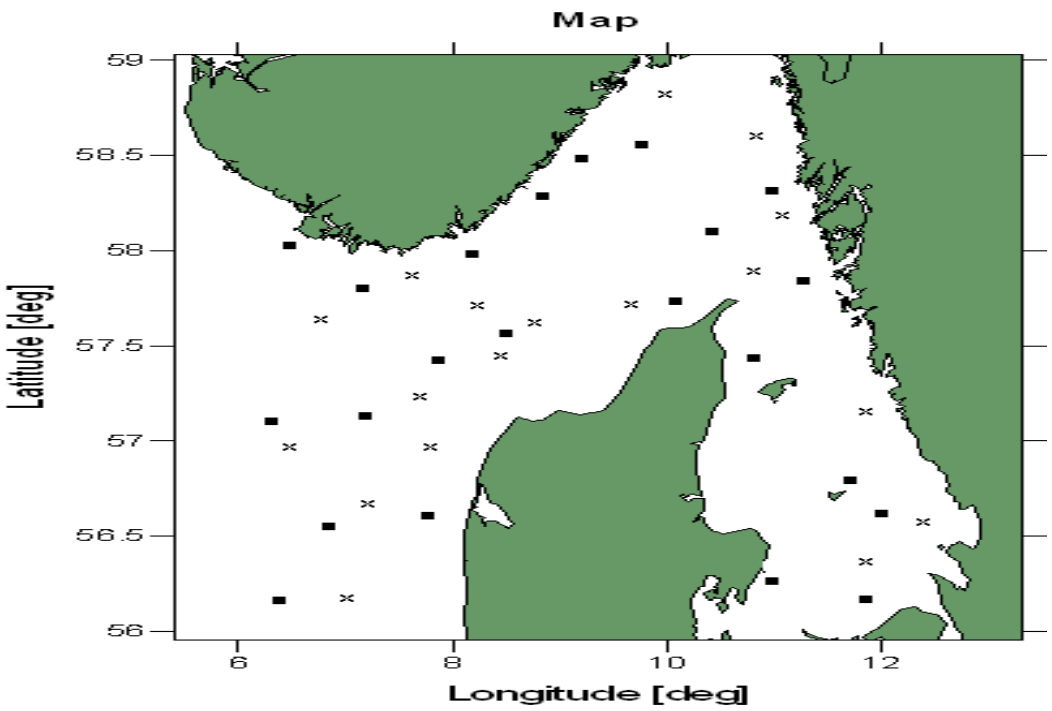
Map
59
58.5
58
57.5
57
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56
Latitude [deg]
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8
10
12
Longitude [deg]

Figure III.G.9 Map showing the RV Dana NHAS 2015 survey track, trawl locations (red triangles: pelagic trawl, blue triangles: bottom trawl) and CTD as well as plankton (WP2) sample positions (x are CTD stations and squares are combined CTD and WP2 stations.

Baltic International Acoustic Survey (BIAS)

Denmark has participated with one scientific staff member on the German R/V Solea in 2015.

International blue whiting spawning stock survey (IBWSS) in areas VI and VII

Denmark has participated with one scientific staff member on the Dutch R/V Tridens and the Irish R/V Celtic Explorer in 2015.

Nephrops UWTV survey in functional unit 3 and 4

The purpose of the survey is to estimate the abundance of *Nephrops* in Skagerrak and Kattegat. An underwater video technique is used and later the video footage is analysed in laboratory to estimate the *Nephrops* abundance in selected subareas. The subareas cover the main *Nephrops* fishing grounds in the Skagerrak and the Kattegat and station allocation follows a random design. Survey and data analysis is conducted in close cooperation with Sweden and coordinated by ICES WGNEPS since 2012. The Danish 2015 survey was conducted with R/V Havfisken in July/August. The survey area was extended into the western Skagerrak and the higher time demand for steaming resulted in a reduction of stations taken compared to previous years.

Due to technical problems with the vessel and the sampling equipment in addition to bad weather not all of the stations could be covered in 2015.

Achievements in 2015:

- 14 days at sea (planned: 15)
- 98 stations (planned: 110).

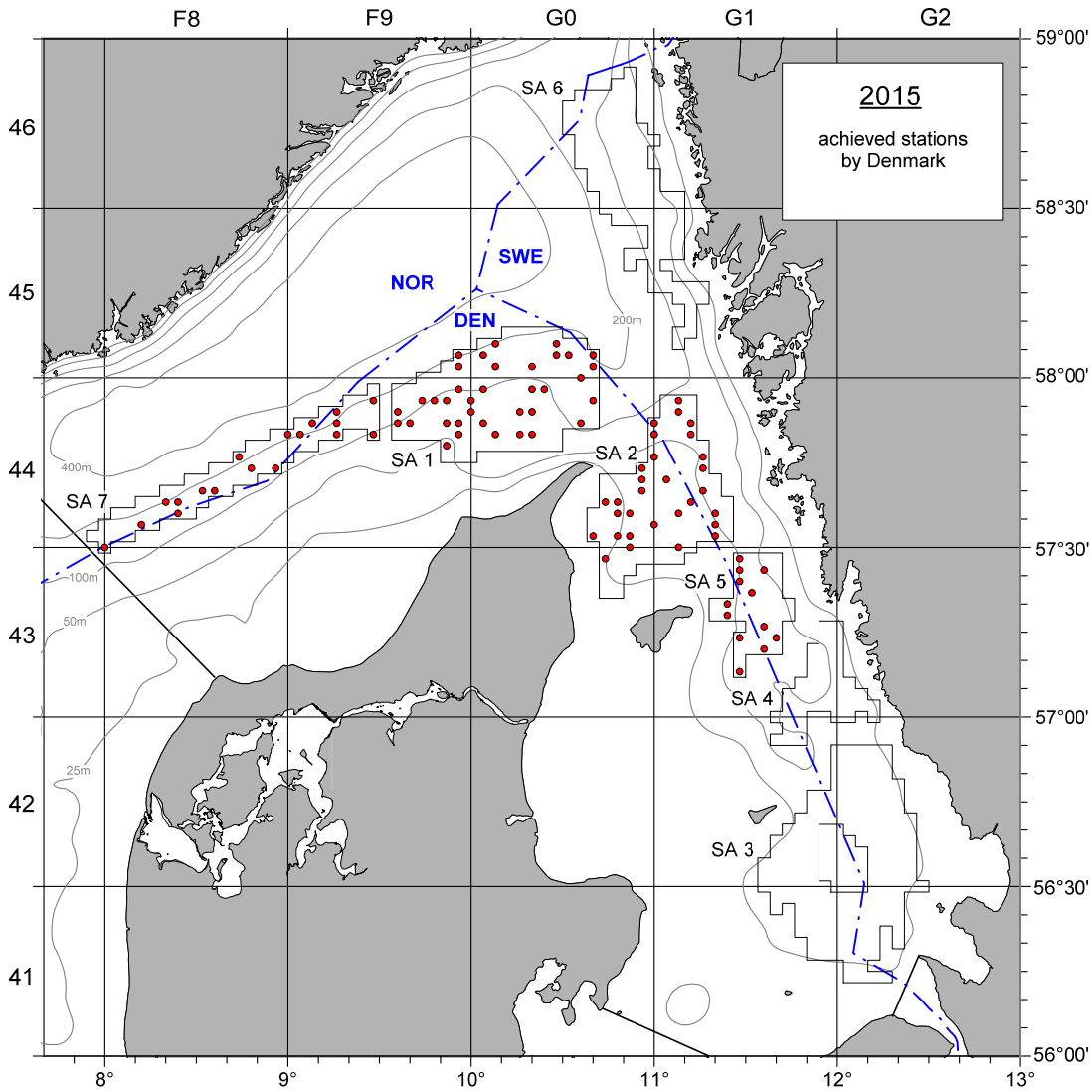

Figure III.G.10 Map showing the achieved and sampling locations in the 2015 Nephrops UWTV survey (SA: subarea; ssubareas 3, 4 and 6 covered by Sweden).

North Sea sandeel survey

The purpose of the sand eel dredge survey is to collect sand eels buried in the seabed and compare catches (number and age composition) with the previous year's collections to assess year class strength of the lesser sand eel (*Ammodytes marinus)* in the different areas adopted by ICES in 2009. Data from the dredge survey is the basis for calculating a 0-group index, which is used in stock assessment. The 2015 survey was conducted with the commercial fishing vessel Salling.

Achievements in 2015:

- 25 days at sea (planned: 24)
- 270 dredge hauls and 34 sediment grab samples distributed over 89 sample positions (planned: 68 with high priority and 38 with low priority).

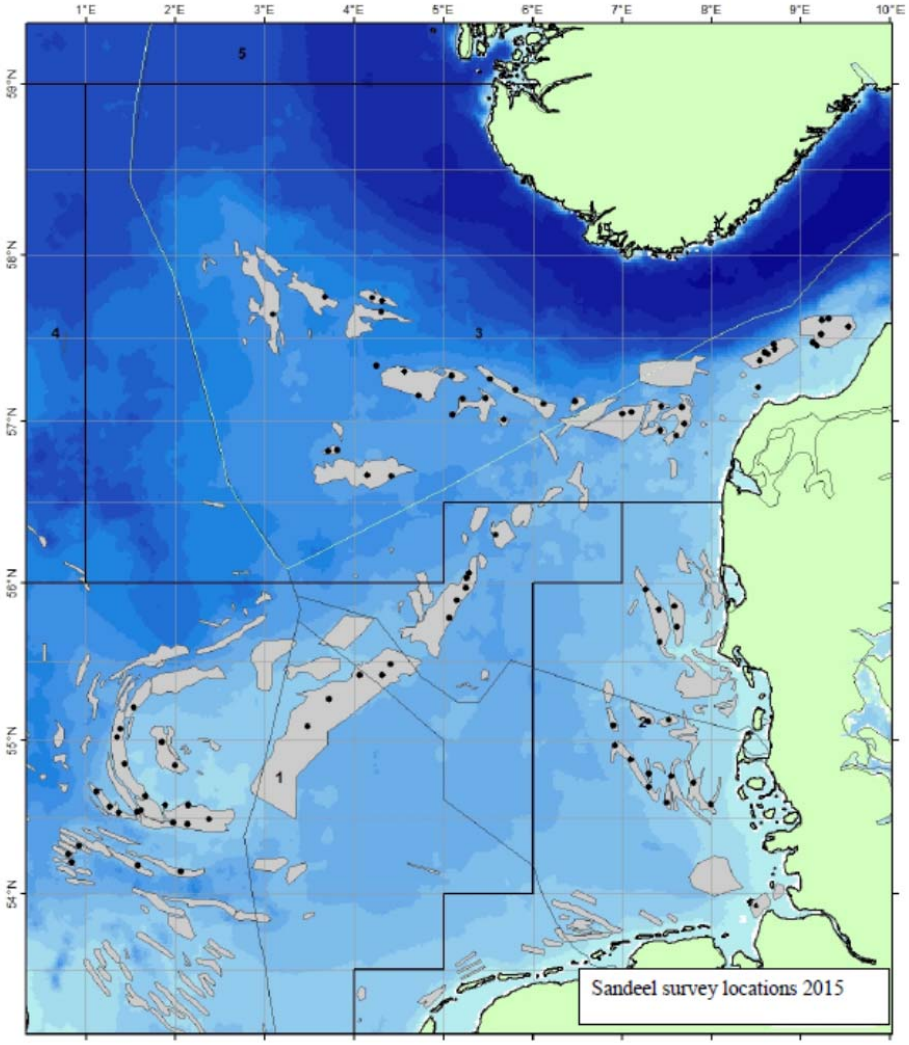

Figure III.G.11 Map showing the sampling locations in the 2015 sandeel survey with the commercial fishing vessel Salling (black circles).

Sole survey in IIIa

A survey series targeting sole in Kattegat and Skagerrak was initiated in 2004 in order to establish a time series of catch and effort data independent of the commercial fishery. The survey is conducted at night were sole are active. The survey is the main input to the Kattegat –Skagerrak sole assessment. The number of stations was reduced from 116 to 80 in 2011 but this did not change the overall trends for the most common commercial species. There were no surveys conducted in 2012 and 2013. The surveys were resumed in 2014.

Achievements in 2015:

- 12 *2 days at sea (planned: 24)
- 78 hauls were conducted (planned: 80).

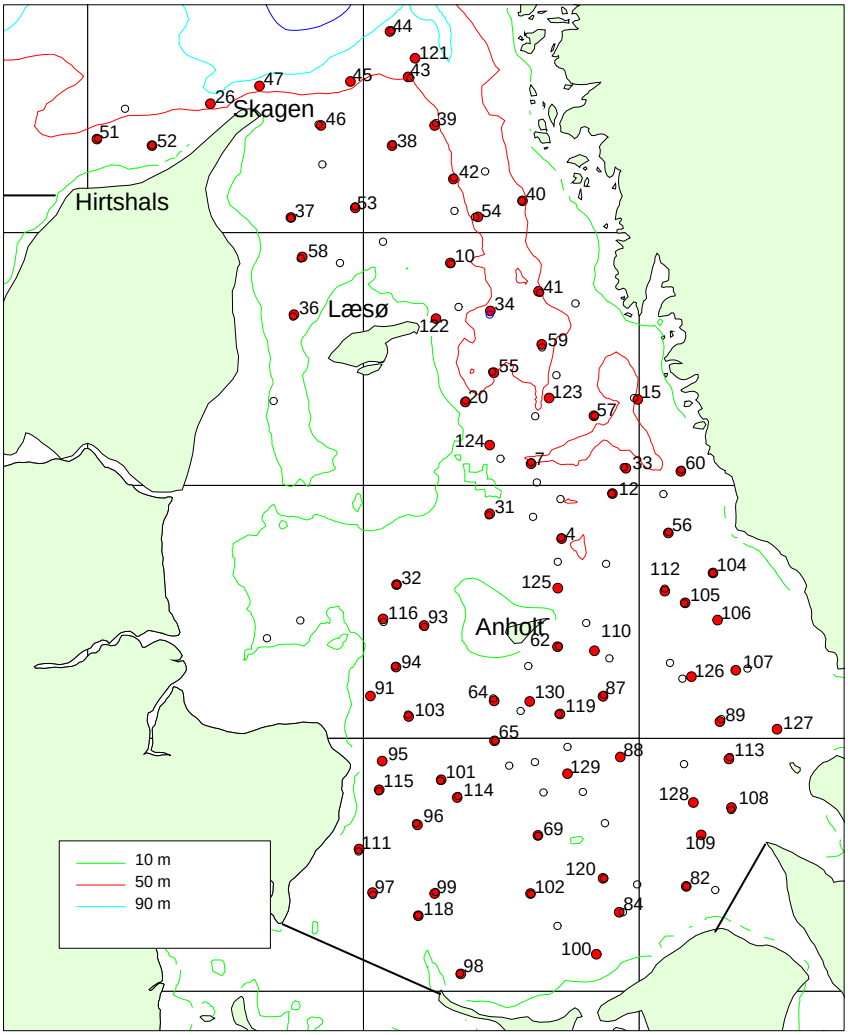

Figure III.G.12 Distribution of stations in 2015 with excluded stations (stations are fixed). Survey was conducted with 2 commercial vessels.

Cod survey in IIIa south

The survey is a combined Danish- Swedish fisherman-scientist survey. The goal of the Kattegat cod survey is to estimate the abundance, biomass and distribution of cod and to establish a fisheries independent time series of catch and effort series. Furthermore, a recruitment index is established. The results has for the first time in 2015

been used, together with commercial catch and effort data, to strengthen the scientific advice on the cod stock in Kattegat. The 4 commercial trawlers (2 Swedish and 2 Danish) participating in the survey conduct the survey without any restrictions in the vessels quota, days at sea regulation and with dispensation from all by-catch regulations. Each vessel is planned to conduct 20 stations

Achievements in 2015 by Denmark:

- 6 *2 days at sea (planned: 12)
- 40 hauls (planned: 40).

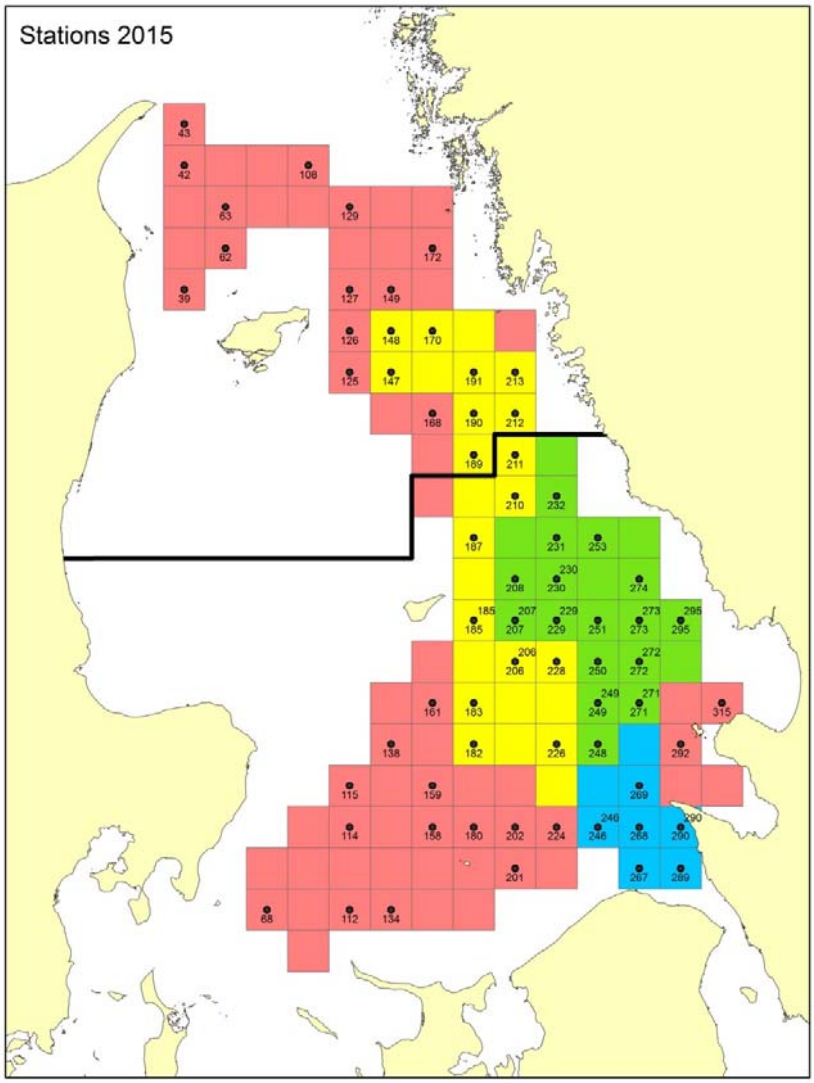

Figure III.G.13 Distribution of stations in 2015 conducted.

III G 2 Data quality: results and deviation from NP proposal

No serious data quality problems or deviations from the NP occurred in 2015.

III G 3 Follow-up of Regional and international recommendations

All surveys were conducted according to international or national manuals and guidelines.

III G 4 Action taken to avoid shortfalls

The old RV Havfisken has been replaced with a new RV Havfisken in the beginning of 2016 and the sampling equipment for the Nephrops UWTV has been renovated.

IV. Module of the evaluation of the economic situation of the aquaculture and processing industry

IV.A Collection of data concerning the aquaculture

IV.A.1 Achievements: Results and deviation from NP proposal

Definition of the population

The Danish aquaculture sector is defined by the Business Register. In the Business Register the aquaculture sector is defined by the European NACE code 03.2. (European NACE rev. 2). There are no deviations from definition given by the DCF.

Segmentation

Data is segmented into 4 groups according to their main farming technique, determined on the basis of production value, corresponding to Appendix XI of Commission Decision 2008/949/EC.

Land based farming

The land based fish farming is dominated by pond farms producing Rainbow Trout and recirculation systems producing European eel. New farm types producing rainbow trout by the use recirculation technology has been in production since 2006.

Traditional pond farms in Denmark produce almost exclusively Rainbow Trout. In 2013 there were 157 farms distributed on 85 companies. The production volume was 17,908 tonnes and the value was 54.3 million EUR. Companies producing more than one species of trout, can for most part be clearly allocated to this segment, because their main income comes from production of Rainbow Trout. Most of the companies have an integrated production from hatchery to portion size fish. There are both small and large producers but otherwise the segment is very homogenous.

Recirculation systems producing rainbow trout in 2013 consisted of 33 farms distributed on 20 companies. The production volume was 14,046 tonnes and the value was 36.6 million EUR. Most of the companies have an integrated production from hatchery to portion size fish. It is expected that this segment will grow in the coming years, because the environmental impact from these recirculation farms is considered less than from the traditional pond farms.

Recirculation systems producing European Eel in 2013 consisted of 8 farms distributed on 7 companies. The production volume was 971 tonnes and the value was 8.9 million EUR. The segment is very homogeneous; all farms are very intensive and re-circulate more than 95% of the water. All companies have the same kind of production from glass eel to the final product.

Nurseries and hatcheries are for most part an integrated part of the production process inside each company. Only a few companies have specialised in production of eyed eggs or fingerling. This segment is not presented separately.

Sea based farming

Sea cage farms in Denmark produce Rainbow Trout in cages. In 2013 there were 18 farms distributed on 6 companies. The production volume was 14,505 tonnes and the value was 68.8 million EUR. The production in each farm is quite homogeneous even though there are both small and large producers. The difference in volume and value is caused mainly by the production of trout eggs, roe, which estimated at 14.8 million EUR is the most valuable product from the Danish sea farms.

Shellfish farms producing Blue Mussels on long lines began production activity in 2004 and are still at a low production level. In 2013 there were 11 farms distributed on 9 companies. The production volume was 851 tonnes and the value was 0.9 million EUR. The production methods in the segment are very homogeneous.

IV.A.2 Data quality: Results and deviation from NP proposal

As described in the National Programme Proposal, for some segments only a small number of companies are expected to participate in the account data survey. Hence, for discretional reasons only main sums regarding production and account data may be presented for these segments.

Farms in the Danish segment *Other farms* are producing Turbot, Pike Perch, Pollan/Powan, European Perch, Barramundi and a few other species in very small scale. In 2013 this segment consisted of 5 farms from 3 companies. Both the species produced, and the techniques used are very different in this segment.

IV.A.3 Follow-up of regional and international recommendations

DST expects to participate in the Regional Coordination Meetings when unforeseen items concerning the collection and use of economic data for the aquaculture sector are on the agenda.

DST experts have participated in the following meetings under the Scientific, Technical and Economic Committee for Fisheries (STECF):

IV.A.4 Action to avoid shortfalls

DST has launched an annual recruitment campaign in collaboration with the sector organisation Danish Aquaculture to avoid shortfalls. Each year Danish Aquaculture contacts its members in order to recruit new participants to the account data survey.

IV.B Collection of data concerning the processing industry

IV.B.1 Achievements: Results and deviation from NP proposal

Definition of population

The Danish fish processing industry is defined by the Business Register. In the Business Register the fish processing industry is defined by the NACE code 10.20. (European NACE rev. 2), which includes:

NACE 10.20.10 – Fish processing and preservation.

NACE 10.20.20 – Smoking, curing and salting of fish etc.

NACE 10.20.30 – Fish meal factories.

For enterprises that carry out fish processing, but not as a main activity, it is mandatory to collect the following data, in the first year of each period:

a) Number of enterprise and
b) Turnover attributed to fish processing.

The number of enterprises and the turnover attributed to fish processing can be extracted from Statistics Denmark Industrial Commodity Statistics and Account Statistics. The “purity” of the processing industry is very high. In 2013 about 97 % of the commodities, which contain fish or fish products, were produced in the branches defined by the European NACE code 10.20. There were only 5 non NACE-10-20 enterprises with fish processing in 2013. Due to the limited numbers of enterprises and rules of confidentiality the total turnover from enterprises carrying out fish processing not as a main activity cannot be shown. The reason is that one enterprise constitutes more than 80% of the total turnover from this group of enterprises, and from the general rules of securing confidentiality the sum for all enterprises carrying out fish processing not as a main activity cannot be shown.

The Danish data collection for the processing industry covers the whole population defined by the Business Register NACE 10.20, which corresponds to a 100% response rate. The data collection is based on the Danish Account Statistics collected by Statistics Denmark covering the whole population defined by the Business

Register NACE 10.20. Data for the Account Statistics is collected from different sources and combined in such a way that a complete set of accounting items is computed for each business enterprise.

The industrial commodity statistics describe manufacturers' sales of commodities measured in volume and value. This statistics is used for classification of firms into subgroups by species and product form.

Planned sampling

The type of data collection is census (A).

The Danish data collection is based on data from the Account Statistics collected by Statistics Denmark. The Account Statistics covers all enterprises in the Danish fish processing industry. In collaboration with Statistics Denmark data from the Industrial Commodity- and Account Statistics are combined to comply with the variables listed in Appendix XII of Commission Decision 2008/949/EC.

The data is collected and processed by Statistics Denmark. The final segmentation and validation of data concerning the processing industry is done in cooperation between IFRO and Statistics Denmark.

Segmentation

In the national proposal the processing industry was divided into 13 sub branches. Due to the limited numbers of enterprises and rules of confidentiality, the 13 sub branches are merged to 6 sub branches.

IFRO has examined the composition of commodities from each enterprise in the processing industry for the years 2000 until 2013. This investigation has provided the background for dividing the enterprises into 6 sub branches on the basis of the enterprise's commodity production. The first criteria for the division of the sub branches is the species that the enterprise processes and secondly the degree of processing. The 6 sub branches also reflect the most important species in the Danish primary sector, and if there is a change in the supply of raw material, it will probably reflect on these groups. The 6 sub branches will probably also reflect the social and economic impact, on the processing industry of measures taken on behalf of the common fisheries policy.

Data can also be segmented into 4 groups based on the number of employed calculated as Full-time equivalents according to Appendix XII of Commission Decision 2008/949/EC.

IV.B.2 Data quality: Results and deviation from NP proposal

All requested indicators listed in Appendix XII of Commission Decision 2008/949/EC are collected in the Danish data collection program for the fish processing industry.

In the data collection program it is suggested that the segmentation of the fish processing industry should be according to the number of persons employed (SBS 16 11 0) in each enterprise (SGECA 08 01 Lisbon). Using the number of persons employed is not the common methodology used by the statistical offices in Europe, including Eurostat. It is, therefore, suggested that the segmentation should instead be according to the number of FTE employed in the enterprise (SBS 16 14 0). The Danish segmentation is based on the segmentation in Statistics Denmark, which is based on the number of FTE employed in the enterprise.

IV.B.3 Follow-up of regional and international recommendations

IFRO expects to participate in the Regional Coordination Meetings when items concerning the collection and use of economic data for the fish processing industry are on the agenda.

There have not been any meetings under the Scientific, Technical and Economic Committee for Fisheries (STECF) concerning the processing industry in 2015. It is expected that a new meeting will be held in the fall of 2017.

Follow-up of recommendations from the STECF: Report on the Evaluation of Data Collection Related to the Fish Processing Sector (SGECA 09 03). STECF observes that the working group report presents possible deeper economic analysis based on data collected under the old and new data regulations. The possibilities presented here are ambitious, and are not feasible if economic data are provided on a national level only, as requested by the DCR/DCF. In order to be able to conduct the analyses proposed here, STECF recommends that at the national institutes, data should be disaggregated by either type of commodity or by company size.

Data for the Danish processing industry can be disaggregated by both type of species/commodity or by company size as recommended by the STECF.

IV.B.4 Action to avoid shortfalls

There are no shortfalls in the data collection program for the processing industry in Denmark.

V. Module of evaluation of the effects of the fishing sector on the marine ecosystem

V. 1 Achievements: results and deviation from NP proposal

The indicators 1, 2, 3 and 4 listed in Commission Decision 2010/93/EC Appendix XIII of the Commission Decision require data on species abundance and length distribution by species from fishery independent research surveys. These data has been collected through the annual surveys carried out by DTU Aqua. The spatial and temporal coverage of data collection for the evaluation of effects of the fishing sector consists of area IV in the first and third quarters and in area IIId in the first and fourth quarters 2014.

VMS data has been used for indicators 5-7 require. VMS data has been made available for DTU Aqua for research purpose under certain conditions such as safeguarding the confidentiality of the identity of individual the vessels. The data are available on a resolution of one record every 1 hour. As described below in section VI A “Management and the use of the data” logbooks, selling slips and VMS data are available. Therefore, it has been possible to link VMS, Logbook and sales slips data.

Indicator 8 can be calculated by using the collected at sea observer data.

Indicator 9. The economic data collection carried out by DST includes data on fuel consumption. It is therefore possible to estimate fuel costs per quarter and métier for some segments.

There has been no deviation from the NP.

V. 2 Actions to avoid shortfalls

No action is needed.

VI. Module for management and use of the data

VI. 1 Achievements: results and deviation from NP proposal

Primary data collected under the Danish programme has been as planned stored in the following computerised databases:

- Vessel register. Data on fishing capacity. (AgriFish Agency)
- Logbook database. Data on origin of catches and on effort. (AgriFish Agency)
- Sales notes database. Data on quantities landed and prices. (AgriFish Agency)
- Species composition database. Data on species composition in landings for industrial purposes. (AgriFish Agency)
- Biological database. Data on discards and biological parameters. (DTU Aqua)
- Economic data. (DST)

In order, for the three involved institutes, to use the same primary data on capacity, effort, and geographical distribution of the origin of the landings a common database has been produced every year, the Danish Fisheries Analyses Database (DFAD). This database is a database where data from the register on Danish fishing vessels, data from the Danish logbooks and the catch area declarations database together with data from the Danish sales notes database are merged. It is therefore possible to categorise each landing in one fleet segment, in one fishery etc. This database contains most of the information requested in research projects and in relation to fisheries management. The DFAD is quarterly and yearly updated. The design and development of the database is made in a co-operation between the three above mentioned institutes.

The collected biological data has been stored in a new database (“Fiskeline”) managed by DTU Aqua. These primary data are surrounded by confidentiality and will not be passed on to other persons or authorities without permission.

Economic data has been collected by DST and stored in a database managed by the institute. These primary data are surrounded by strict confidentiality and will not in any circumstance be passed on to other persons or authorities. Each year DST produces an analytic file on the individual level, which includes relevant data for stratification and grouping for statistical purposes. Based on the analytic file a number of statistical files has been produced and are made available for external users.

All primary data collected under the programme are dealt with in confidence. Accesses to the data are limited to authorised staff members from the three institutes and no one outside the institutes has access to the data without permission.

Denmark has provided sets of data to support scientific analysis needed to advice fisheries management. It includes parameters for assessment purposes or other scientific analysis such as number-at-age, weight-at-age and maturity-at-age which have routinely been submitted to relevant ICES governed assessment groups and to relevant STECF expert groups.

Furthermore, Denmark has provided data to other end user if requested.

VI. 2 Actions to avoid shortfalls

No action is needed.

VII. Follow-up of STECF recommendations

STECF recommendations relevant to this chapter are listed in in table II.B.2.

Denmark has taken the recommendations made by the Expert Working group (Evaluation of the 2009, 2010, 2011, 2012 and 2013 Annual report and the evaluation of 2012-13 National Programme) under consideration while writing the Annual report for 2014.

For the 2013 and 2014 STECF plenary meeting reports no DCF relevant recommendations were found.

VIII. List of acronyms and abbreviations

Acronym/Abbreviation	Description
DCCA	Danish Commerce and Companies Agency
DCF	Data Collection Regulation (EC) No 199/2008
DST	Statistics Denmark
DTU Aqua	National Institute for Aquatic Resources
AgriFish Agency	AgriFish Agency
IFRO	Danish Food and Resource Economics Institute, Denmark
FTE	Full Time Equivalent
ICES	International Council for the Exploration of the Sea
IQ/ITQ	Individual quota / Individual transferable quota
WKBALPEL	Workshop on data for Baltic Pelagics
WKADS	Workshop on Age Determination of Salmon
WKBENCH	Benchmark Workshop on Saithe, Haddock, Herring and Horse Mackerel Stocks
WGBYC	Working Group on Bycatch of Protected Species
WKCOD	North Sea cod benchmark
PGCCDBS	Planning Group on Commercial Catches, Discards and Biological Sampling
ADGSANDEEL	Sandeel Advice Drafting Group
WKARGH	Workshop on Age Reading of Greenland Halibut
WKARAS	Workshop on Age reading of European Atlantic Sardine
WCSANDEEL	ACOM WebEx to finalise sandeel advice
WGMME	Working Group on Marine Mammal Ecology
WKROUNDMP	Joint ICES-STECF Workshop on management plan evaluations for roundfish stocks

WGDEEP	Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources
HAWG	Herring Assessment Working Group for the Area South of 62ºN
WKAREA-2	Workshop on Age Reading of European and American Eel
WGNAS	Working Group on North Atlantic Salmon
WGBAST	Baltic Salmon and Trout Assessment Working Group
WKCPUEFFORT	Workshop on the utility of commercial CPUE and VMS data in assessments
WCDSS	ACOM WebEx to finalize advice on deep sea surveys
WGBFAS	Baltic Fisheries Assessment Working Group
WGECO	Working Group on the Ecosystem Effects of Fishing Activities
NWWG	North-Western Working Group
AFWG	Arctic Fisheries Working Group
PGRFS	Planning Group on Recreational Fisheries Surveys
WGNSSK	Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak
WGHMM	Working Group on Hake, Monk and Megrim
WGCSE	Working Group for the Celtic Seas Ecoregion
WKSHARK	Workshop on splitting of deep water shark historical catch data WKSHARK
WKMSHS	Workshop on Sexual Maturity Staging of Herring and Sprat
WGEF	Working Group on Elasmobranch Fishes
WGANSA	Working Group on Anchovy and Sardine
SGPIDS	Study Group on Practical Implementation of Discard Sampling Plans
WGHARP	Working Group on Harp and Hooded Seals
WGWIDE	Working Group on Widely Distributed Stocks

WGMIXFISH	Working Group on Mixed Fisheries Advice for the North Sea
WKNARC	Workshop of National Age Readings Coordinators
WGEEL	Joint EIFAC/ICES Working Group on Eels
SGRF	Study Group on Recruitment Forecasting
WKPICS1	Workshop on practical implementation of statistical sound catch sampling programmes
WKMSREGH	Workshop on Sexual Maturity Staging of Redfish and Greenland Halibut
WGRS	Working Group on Redfish Surveys
NIPAG	Joint NAFO/ICES Pandalus Assessment Working Group
SGBALANST	Study Group on Data Requirements and Assessments Needs for Baltic Sea Trout
SIMWG	Stock Identification Methods Working Group
WGNEW	The Working Group on Assessment of New MoU Species
WKMERGE	Joint ICES/STECF Workshop on Methods for Merging Fleet Metiers for Fishery based Sampling
WKPRECISE	Workshop on Methods to evaluate and estimate the precision of fisheries data used for assessment
SCV	Standard Catch Value = landings per species multiplied by 3-year average prices.

IX. Comments, suggestions and reflections

None

X. References

ICES, 2012a. Report of the Workshop on Eel and Salmon DCF Data (WKESDCF), 3 – 6 July 2012, ICES HQ, Copenhagen, Denmark. ICES CM / ACOM:62. 67 pp.

ICES. 2012b. Manual for the International Bottom Trawl Surveys. Series of ICES Survey Protocols. SISP 1IBTS VIII. 68pp.

RCM NS&EA 2014: Report of the Regional Co-ordination Meeting for the North Sea and Eastern Arctic 2014.

RCM NS&EA 2013: Report of the Regional Co-ordination Meeting for the North Sea and Eastern Arctic 2013.

RCM Baltic 2013: Report of the Regional Co-ordination Meeting for the Baltic 2013.

RCM Baltic 2014: Report of the Regional Co-ordination Meeting for the Baltic 2014.

LM 2013: Report from the 10th Liaison Meeting 2013.

LM 2014: Report from the 11th Liaison Meeting 2014.

ICES, 2013c. Manual for the Baltic International Trawl Surveys. ADDENDUM 1:

WGBIFS BITS MANUAL 2013.

ICES. 2015. Report of the International Bottom Trawl Survey Working Group (IBTSWG), 23-27 March 2015, Bergen, Norway.

Annex 1

See attached files.

For the bilateral agreements that has not been renewed in written signed documents it has been just to prolong the agreements.

Bilateral Agreement between the DTU Aqua, Denmark and Sea Fishieries Institute in Gdynia Poland (MIR), for the collection of biological samples in accordance with EC Regulation 665/2008, laying down detailed rules for the application of Council Regulation (EC) 199/2008, and its Commission Decision 2008/949/EC.

Denmark and Poland have agreed entering co-operation on collection of fisheries data. This agreement has been establish due to common interests in the fisheries in the Baltic. The eventual additional sampling costs will be covered within the National Sampling Programme from 2011-2013.

ANNEX I

Agreement: **Cod (*Gardus morhua*) in ICES Division IIIb-d**

In accordance with (Commission Regulation 199/2008, Commission Regulation 665/2008 and Commission Decision (2008/949/EC)) countries that receive foreign landings are responsible to sample those.

Description of sampling:

In year: **2011**

Flag country: **Denmark** Landings (2009): 1 800(tonnes)

In receiving country: **Poland**

This means that receiving country will sample this particular species/stock in accordance with the standards defined in (EC) No 949/2008.

Sampling Intensity:

Based on last year's landings the sampling effort for this species/stock would be:

No samples: 2

No of age readings per sample: 1**25**

No of length measurements per sample: **200**

No of individual weight per sample: **0**

Measurement: cm class

If landings decrease or increase the amount of samples will be adjusted accordingly.

Data responsibility:

Poland obtains the samples by market sampling from landings. Denmark is responsible for submitting the data to relevant ICES WG and to the EC.

Data will be delivered to Denmark regularly and at latest 1 February 2012

Contact persons:

Receiving country:

XX

Flag country:

Svend-Erik Levensky (sel@aqua.dtu.dk +45 33963300)

Signatures:

For DTU Aqua	For MIR
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Jørgen Dalskov	
National Correspondent	Director Institute of Marine Research
National Institute of Aquatic Resources	

Bilateral Agreement between the Finnish Game and Fisheries Research Institute and National Institute of Aquatic Resources (Denmark) for the collection and genetic analysis of salmon catch samples in accordance with EC Regulation 665/2008, laying down detailed rules for the application of Council Regulation (EC) 199/2008, and its Commission Decision 2010/74/EU

Agreement:

Salmon fishing vessels, which operate in the Baltic Sea Main Basin and land for first sale into Denmark, will be sampled as part of the Danish National Programme under the requirements of the EC Data Collection Framework (199/2008). The eventual additional sampling costs will be covered within the Danish National Sampling Programme for 2011- 2013.

Based on this agreement, the National Institute of Aquatic Resources (DTU Aqua) will deliver the collected salmon samples (part of the scales of each sample and associated data) to the Finnish Game and Fisheries Research Institute (FGRFI) for the genetic analysis. The genetic analysis will be carried out as part of the Finnish National Programme under the requirements of the EC Data Collection Framework (199/2008). The costs of genetic analysis will be covered within the Finnish National Sampling Programme for 2011- 2013.

Description of sampling:

The sampling of landings will be carried out in accordance with the Danish National Sampling Programme.

Sampling Intensity:

Levels and coverage as agreed at the annual meeting of RCM Baltic.

Data responsibility:

The FGFRI will deliver the results of genetic analysis to the DTU Aqua, as well as to the relevant ICES Expert Groups, and to the EC under the requirements of its Data Collection Framework.

Contact persons: In FGFRI, Tapani Pakarinen
In DTU Aqua, Frank-Ivan Hansen

Finnish Game and Fisheries Research Institute Paavo Parmanne ~~Iaakko Erkinaro, Research Director~~ On behalf of the Research Director Date: 19.3.2010	National Institute for Aquatic Ressources Jørgen Dalskov, National Correspondent Date: 18/3-2010

Nov 2014

Bilateral Agreement between the DTU Aqua, Denmark and Swedish Agency of Marine and Water Management (SwAM), Sweden for the collection of biological samples in accordance with EC Regulation 665/2008, laying down detailed rules for the application of Council Regulation (EC) 199/2008, and its Commission Decision 2010/93/EU.

Denmark and Sweden have agreed entering co-operation on collection of fisheries data. This agreement has been establish due to common interests in the fisheries in the Skagerrak (Division IIIa North), the Kattegat (Division IIIa South) and in the Baltic Sea. Furthermore, substantial landings by Swedish flagged vessels take place in Denmark and therefore, in order to optimize the quality of the sampling programme, exchange of information and knowledge is necessary. The eventual additional sampling costs will be covered within the National Sampling Programme 2014-2016.

Sampling of the following species has been discussed and agreed:

Plaice in the Skagerrak and Kattegat

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 10 percent of the total TAC for the areas combined. Age reading calibration between Denmark and Sweden will be carried out on routine basis.

Cod in the North Sea

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 5 percent of the total TAC.

Cod in the Baltic sd25-32

About 1 230 tonnes of cod fished by Denmark is landed in Sweden (10 % of total landings) (RCM Baltic 2014). It has been agreed that Denmark will cover the sampling of cod by performing statistically sound sampling scheme. Swedish harbours are not among the most important harbours and therefore it will not be included in the sampling.....

Haddock in Div. IIIa

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 5 percent of the total TAC.

Saithe in Div. IIIa

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 5 percent of the total TAC.

Sole in Div. IIIa

It has been agreed that only Denmark will carry out sampling from the commercial fishery as the Swedish landings are below the threshold of 5 percent of the total TAC.

Whiting in Div. IIIa

Only Sweden, Denmark and Norway have shares in the TAC. The sum of landings of Swedish and Danish fishermen is below 10 percent of the TAC due to the market situation. Therefore, no sampling is done. On the other hand significant amounts of discard are

obtained in some fisheries in the area. Discard rates of whiting and other relevant species will continue to be sampled.

Norway Lobster in the Kattegat and the Skagerrak

Denmark and Sweden will carry out sampling according to the DCF. It has been agreed that only Sweden will carry out sampling for other biological parameters. The Swedish sampling intensity will compensate for the missing Danish sampling.

Hake in Div. IIIa

The sampling scheme for hake in the area is included in the North Sea (IV, VI, VII, IIXa, IIXb) sampling scheme. Denmark will sample hake according to the DCF.

Special agreements have been developed for the following species and are described in detail in annex I:

Herring in Div. IIIa

Whitch flounder IIIa

Herring in the Baltic Sea

Sprat in the Baltic Sea

ANNEX 1

In accordance with (Commission Regulation 199/2008, Commission Regulation 665/2008 and Commission Decision (2010/93/EC)) countries that receive foreign landings are responsible to sample those.

Agreement: **Herring in ICES Division IIIa**

Description of sampling:

Flag country: **Sweden** Landings (2013): 4 500 (tons)

In receiving country: **Denmark**

This means that the receiving country will sample this particular species/stock from

Trawl fisheries targeting small pelagic fish

Sampling Intensity:

Based on last year's landings the sampling effort for this species/stock would be:

No samples: **5**

No of age readings per sample: **50**

No of length measurements per sample: **50**

No of individual weight per sample: **50**

Measurement: 0.5 cm class, 1 g

If landings decrease or increase the amount of samples will be adjusted accordingly.

Data responsibility:

Denmark obtains the samples by market sampling from unsorted catches. Denmark will sample length, age and weight information. Otoliths should be stored in paper bags provided by SLU Aqua. The raw-data and the otoliths will be sent to Sweden for the age determination of the otoliths. A subset of app 100 otoliths should be returned to Denmark for cross-checking of the age interpretation. Sweden is responsible for submitting the data to relevant ICES WG and to the EC.

Data will be delivered to Sweden regularly on a quarterly basis during the year of sampling.

Contact persons:

Receiving country:

Aage Thaarup (att@aqua.dtu.dk or +45 35 88 32 48)

Flag country:

Marianne Johansson (marianne.johansson@slu.se or +46 10 478 40 27)

Agreement: Witch Flounder Division IIIa

This species is a new species to be covered and should be sampled according to the DCF. It has been agreed that sampling of witch flounder could be a joint effort between Sweden and Denmark. Sweden will sample this species in the amount to sustain a sampling scheme of the species for possible future assessment. Denmark is running a complementary sampling scheme

Description of sampling:

Samples will be collected in Denmark and Sweden in order to get a better coverage of the fishery in space and time. Sweden will conduct the age reading of all Danish samples and all the data will then be shared between the countries for raising.

Sampling Intensity:

Approximately 600 individuals are collected and sent to Sweden for age reading

Data responsibility:

Denmark collect the data from the market sampling /sea sampling and sends the otoliths to Sweden for age reading. Denmark is responsible for submitting the data to relevant ICES WG and to the EC.

Otoliths will be delivered to Sweden regularly and at latest 1 February the year after sampling and Sweden will return with the age readings latest 1 March the year after sampling

Contact persons:

Sweden:

Barbara Bland (Barbara.bland@slu.se or +46 10 478 4013)

Denmark:

Helle Rasmusen (hr@aqua.dtu.dk) or +45 35 88 32 08

Agreement: **Herring in ICES Division III b-d.**

Description of sampling:

Flag country: **Sweden** Landings (2013): 14 088 (tons)

In receiving country: **Denmark**

This means that the receiving country will sample this particular species/stock from

Trawl fisheries targeting small pelagic fish. The Swedish fishery is a mixed sprat and herring fishery and mosly the 2 species are landed together. The Danish sampling is therefore conducted on the mixed landings.

Sampling Intensity:

Based on last year's landings the sampling effort for this species/stock would be:

No samples: 14

No of age readings per sample: **50**

No of length measurements per sample: **50**

No of individual weight per sample: **50**

If landings decrease or increase the amount of samples will be adjusted accordingly.

Measurement: 0.5 cm class, 1 g

If landings decrease or increase the amount of samples will be adjusted accordingly.

Data responsibility:

Denmark obtains the samples by market sampling from unsorted catches, stratified by fishery (see above). Denmark will sample length, age and weight information. Otoliths will be stored in paper bags provided by IMR. The raw-data and the otoliths will be sent to Sweden for the age determination of the otoliths. Sweden is responsible for submitting the data to relevant ICES WG and to the EC.

Data will be delivered to Sweden regularly on a quarterly basis during the year of sampling

Contact persons:

Receiving country:

Frank Ivan Hansen (fih@aqua.dtu.dk or +45 35 88 33 63)

Flag country:

Carina Jernberg (carina.jernberg@slu.se or +46 10 478 40 25)

Agreement: **Sprat in ICES Division III b-d.**

Description of sampling:

Flag country: **Sweden** Landings (2013): 28 766 (tons)

In receiving country: **Denmark**

This means that the receiving country will sample this particular species/stock from

Trawl fisheries targeting small pelagic fish The Swedish fishery is a mixed sprat and herring fishery and mostly the 2 species are landed together. The Danish sampling is therefore conducted on the mixed landings.

Sampling Intensity:

Based on last year's landings the sampling effort for this species/stock would be:

No samples: 28

No of age readings per sample: **50**

No of length measurements per sample: **50**

No of individual weight per sample: **50**

Measurement: 0.5 cm class, 1 g

If landings decrease or increase the amount of samples will be adjusted accordingly.

Data responsibility:

Denmark obtains the samples by market sampling from unsorted catches, stratified by fishery. Denmark will send the frozen samples to Sweden once every quarter. Sweden is responsible for length measurements, weight and age reading. Sweden is responsible for submitting the data to relevant ICES WG and to the EC.

Data will be delivered to Sweden regularly on a quarterly basis during the year of sampling

Contact persons:

Receiving country:

Frank Ivan Hansen (fih@aqua.dtu.dk or +45 35 88 33 63)

Flag country:

Carina Jernberg (carina.jernberg@slu.se or +4610 478 40 25)

Signatures:

For DTU Aqua

Jørgen Dalskov

National Correspondent

National Institute of Aquatic Resources

For Swedish Agency for Marine and Water management

Anna Hasslow

National Correspondent

Swedish Agency for Marine and Water management

Date: 6 November, 2014

Nov 2014

Bilateral Agreement between the DTU Aqua, Denmark and Swedish Agency for Marine and Water management (SwAM), Sweden, for the collection of length and age samples collected in the IBTS survey in accordance with EC Regulation 665/2008, laying down detailed rules for the application of Council Regulation (EC) 199/2008, and its Commission Decision 2010/93/EC.

Agreement:

This agreement has been establish to optimize and exchange the age reading expertise for species collected in the IBTS survey. Both Sweden and Denmark are involved in the survey which is conducted in IIIa twice a year. A list of species are collected during the survey according to the Manual for the International Bottom Trawl Surveys ICES CM 2000/D:07, but for some species only a small amount are caught and there is a need for collaboration and task sharing. No additional sampling costs are involved and costs for analysis will be covered in the National Sampling Programme for 2014-2016. Denmark and Sweden seeks for a balanced share of tasks and the species of interests are described below.

Description of sampling:

Age samples will be collected during the IBTS survey according to the manual (ICES CM 2000/D:07) Otoliths will be stored in paperbags and sent to the country in charge for age reading (see below).

Sampling Intensity:

Norway pout (*Trisopterus esmarki*) – Sweden sends the collected otoliths to Denmark for age reading. App 200-300 individuals per year.

Whiting (*Merlangius merlangius*) – Sweden sends the collected otoliths to Denmark for age reading. App 800-1 000 individuals per year.

Data responsibility:

Sweden is responsible for submitting the data to the relevant ICES Expert Groups, and to the EC under the requirements of its Data Collection Framework.

Contact persons:

In Sweden: Barbara Bland (barbara.bland@slu.se) +46 10 478 4013

In Denmark: Helle Rasmussen (hr@aqua.dtu.dk) +45 35 88 32 08

Signatures:

For DTU Aqua

Jørgen Dalskov

National Correspondent

National Institute of Aquatic Resources

For SwAM

Anna Hasslow

National Correspondent

Swedish Agency for Marine and Water Management

Date: 6 November, 2014

Nov 2014

Bilateral Agreement between the DTU Aqua, Denmark and Swedish Agency of Marine and Water Management (SwAM), Sweden for the collection of biological samples in accordance with EC Regulation 665/2008, laying down detailed rules for the application of Council Regulation (EC) 199/2008, and its Commission Decision 2010/93/EU.

Denmark and Sweden have agreed entering co-operation on collection of fisheries data. This agreement has been establish due to common interests in the fisheries in the Skagerrak (Division IIIa North), the Kattegat (Division IIIa South) and in the Baltic Sea. Furthermore, substantial landings by Swedish flagged vessels take place in Denmark and therefore, in order to optimize the quality of the sampling programme, exchange of information and knowledge is necessary. The eventual additional sampling costs will be covered within the National Sampling Programme 2014-2016.

Sampling of the following species has been discussed and agreed:

Plaice in the Skagerrak and Kattegat

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 10 percent of the total TAC for the areas combined. Age reading calibration between Denmark and Sweden will be carried out on routine basis.

Cod in the North Sea

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 5 percent of the total TAC.

Cod in the Baltic sd25-32

About 1 230 tonnes of cod fished by Denmark is landed in Sweden (10 % of total landings) (RCM Baltic 2014). It has been agreed that Denmark will cover the sampling of cod by performing statistically sound sampling scheme. Swedish harbours are not among the most important harbours and therefore it will not be included in the sampling.....

Haddock in Div. IIIa

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 5 percent of the total TAC.

Saithe in Div. IIIa

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 5 percent of the total TAC.

Sole in Div. IIIa

It has been agreed that only Denmark will carry out sampling from the commercial fishery as the Swedish landings are below the threshold of 5 percent of the total TAC.

Whiting in Div. IIIa

Only Sweden, Denmark and Norway have shares in the TAC. The sum of landings of Swedish and Danish fishermen is below 10 percent of the TAC due to the market situation. Therefore, no sampling is done. On the other hand significant amounts of discard are

obtained in some fisheries in the area. Discard rates of whiting and other relevant species will continue to be sampled.

Norway Lobster in the Kattegat and the Skagerrak

Denmark and Sweden will carry out sampling according to the DCF. It has been agreed that only Sweden will carry out sampling for other biological parameters. The Swedish sampling intensity will compensate for the missing Danish sampling.

Hake in Div. IIIa

The sampling scheme for hake in the area is included in the North Sea (IV, VI, VII, IIXa, IIXb) sampling scheme. Denmark will sample hake according to the DCF.

Special agreements have been developed for the following species and are described in detail in annex I:

Herring in Div. IIIa

Whitch flounder IIIa

Herring in the Baltic Sea

Sprat in the Baltic Sea

ANNEX 1

In accordance with (Commission Regulation 199/2008, Commission Regulation 665/2008 and Commission Decision (2010/93/EC)) countries that receive foreign landings are responsible to sample those.

Agreement: Herring in ICES Division IIIa

Description of sampling:

Flag country: **Sweden** Landings (2013): 4 500 (tons)

In receiving country: **Denmark**

This means that the receiving country will sample this particular species/stock from

Trawl fisheries targeting small pelagic fish

Sampling Intensity:

Based on last year's landings the sampling effort for this species/stock would be:

No samples: **5**

No of age readings per sample: **50**

No of length measurements per sample: **50**

No of individual weight per sample: **50**

Measurement: 0.5 cm class, 1 g

If landings decrease or increase the amount of samples will be adjusted accordingly.

Data responsibility:

Denmark obtains the samples by market sampling from unsorted catches. Denmark will sample length, age and weight information. Otoliths should be stored in paper bags provided by SLU Aqua. The raw-data and the otoliths will be sent to Sweden for the age determination of the otoliths. A subset of app 100 otoliths should be returned to Denmark for cross-checking of the age interpretation. Sweden is responsible for submitting the data to relevant ICES WG and to the EC.

Data will be delivered to Sweden regularly on a quarterly basis during the year of sampling.

Contact persons:

Receiving country:

Aage Thaarup (att@aqua.dtu.dk or +45 35 88 32 48)

Flag country:

Marianne Johansson (marianne.johansson@slu.se or +46 10 478 40 27)

Agreement: Witch Flounder Division IIIa

This species is a new species to be covered and should be sampled according to the DCF. It has been agreed that sampling of witch flounder could be a joint effort between Sweden and Denmark. Sweden will sample this species in the amount to sustain a sampling scheme of the species for possible future assessment. Denmark is running a complementary sampling scheme

Description of sampling:

Samples will be collected in Denmark and Sweden in order to get a better coverage of the fishery in space and time. Sweden will conduct the age reading of all Danish samples and all the data will then be shared between the countries for raising.

Sampling Intensity:

Approximately 600 individuals are collected and sent to Sweden for age reading

Data responsibility:

Denmark collect the data from the market sampling /sea sampling and sends the otoliths to Sweden for age reading. Denmark is responsible for submitting the data to relevant ICES WG and to the EC.

Otoliths will be delivered to Sweden regularly and at latest 1 February the year after sampling and Sweden will return with the age readings latest 1 March the year after sampling

Contact persons:

Sweden:

Barbara Bland (Barbara.bland@slu.se or +46 10 478 4013)

Denmark:

Helle Rasmusen (hr@aqua.dtu.dk) or +45 35 88 32 08

Agreement: Herring in ICES Division III b-d.

Description of sampling:

Flag country: **Sweden** Landings (2013): 14 088 (tons)

In receiving country: **Denmark**

This means that the receiving country will sample this particular species/stock from

Trawl fisheries targeting small pelagic fish. The Swedish fishery is a mixed sprat and herring fishery and mosly the 2 species are landed together. The Danish sampling is therefore conducted on the mixed landings.

Sampling Intensity:

Based on last year's landings the sampling effort for this species/stock would be:

No samples: 14

No of age readings per sample: **50**

No of length measurements per sample: **50**

No of individual weight per sample: **50**

If landings decrease or increase the amount of samples will be adjusted accordingly.

Measurement: 0.5 cm class, 1 g

If landings decrease or increase the amount of samples will be adjusted accordingly.

Data responsibility:

Denmark obtains the samples by market sampling from unsorted catches, stratified by fishery (see above). Denmark will sample length, age and weight information. Otoliths will be stored in paper bags provided by IMR. The raw-data and the otoliths will be sent to Sweden for the age determination of the otoliths. Sweden is responsible for submitting the data to relevant ICES WG and to the EC.

Data will be delivered to Sweden regularly on a quarterly basis during the year of sampling

Contact persons:

Receiving country:

Frank Ivan Hansen (fih@aqua.dtu.dk or +45 35 88 33 63)

Flag country:

Carina Jernberg (carina.jernberg@slu.se or +46 10 478 40 25)

Agreement: **Sprat in ICES Division III b-d.**

Description of sampling:

Flag country: **Sweden** Landings (2013): 28 766 (tons)

In receiving country: **Denmark**

This means that the receiving country will sample this particular species/stock from

Trawl fisheries targeting small pelagic fish The Swedish fishery is a mixed sprat and herring fishery and mostly the 2 species are landed together. The Danish sampling is therefore conducted on the mixed landings.

Sampling Intensity:

Based on last year's landings the sampling effort for this species/stock would be:

No samples: 28

No of age readings per sample: **50**

No of length measurements per sample: **50**

No of individual weight per sample: **50**

Measurement: 0.5 cm class, 1 g

If landings decrease or increase the amount of samples will be adjusted accordingly.

Data responsibility:

Denmark obtains the samples by market sampling from unsorted catches, stratified by fishery. Denmark will send the frozen samples to Sweden once every quarter. Sweden is responsible for length measurements, weight and age reading. Sweden is responsible for submitting the data to relevant ICES WG and to the EC.

Data will be delivered to Sweden regularly on a quarterly basis during the year of sampling

Contact persons:

Receiving country:

Frank Ivan Hansen (fih@aqua.dtu.dk or +45 35 88 33 63)

Flag country:

Carina Jernberg (carina.jernberg@slu.se or +4610 478 40 25)

Signatures:

For DTU Aqua

Jørgen Dalskov

National Correspondent

National Institute of Aquatic Resources

For Swedish Agency for Marine and Water management

Anna Hasslow

National Correspondent

Swedish Agency for Marine and Water management

Date: 6 November, 2014

Nov 2014

Bilateral Agreement between the DTU Aqua, Denmark and Swedish Agency of Marine and Water Management (SwAM), Sweden for the collection of biological samples in accordance with EC Regulation 665/2008, laying down detailed rules for the application of Council Regulation (EC) 199/2008, and its Commission Decision 2010/93/EU.

Denmark and Sweden have agreed entering co-operation on collection of fisheries data. This agreement has been establish due to common interests in the fisheries in the Skagerrak (Division IIIa North), the Kattegat (Division IIIa South) and in the Baltic Sea. Furthermore, substantial landings by Swedish flagged vessels take place in Denmark and therefore, in order to optimize the quality of the sampling programme, exchange of information and knowledge is necessary. The eventual additional sampling costs will be covered within the National Sampling Programme 2014-2016.

Sampling of the following species has been discussed and agreed:

Plaice in the Skagerrak and Kattegat

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 10 percent of the total TAC for the areas combined. Age reading calibration between Denmark and Sweden will be carried out on routine basis.

Cod in the North Sea

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 5 percent of the total TAC.

Cod in the Baltic sd25-32

About 1 230 tonnes of cod fished by Denmark is landed in Sweden (10 % of total landings) (RCM Baltic 2014). It has been agreed that Denmark will cover the sampling of cod by performing statistically sound sampling scheme. Swedish harbours are not among the most important harbours and therefore it will not be included in the sampling.....

Haddock in Div. IIIa

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 5 percent of the total TAC.

Saithe in Div. IIIa

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 5 percent of the total TAC.

Sole in Div. IIIa

It has been agreed that only Denmark will carry out sampling from the commercial fishery as the Swedish landings are below the threshold of 5 percent of the total TAC.

Whiting in Div. IIIa

Only Sweden, Denmark and Norway have shares in the TAC. The sum of landings of Swedish and Danish fishermen is below 10 percent of the TAC due to the market situation. Therefore, no sampling is done. On the other hand significant amounts of discard are

obtained in some fisheries in the area. Discard rates of whiting and other relevant species will continue to be sampled.

Norway Lobster in the Kattegat and the Skagerrak

Denmark and Sweden will carry out sampling according to the DCF. It has been agreed that only Sweden will carry out sampling for other biological parameters. The Swedish sampling intensity will compensate for the missing Danish sampling.

Hake in Div. IIIa

The sampling scheme for hake in the area is included in the North Sea (IV, VI, VII, IIXa, IIXb) sampling scheme. Denmark will sample hake according to the DCF.

Special agreements have been developed for the following species and are described in detail in annex I:

Herring in Div. IIIa

Whitch flounder IIIa

Herring in the Baltic Sea

Sprat in the Baltic Sea

ANNEX 1

In accordance with (Commission Regulation 199/2008, Commission Regulation 665/2008 and Commission Decision (2010/93/EC)) countries that receive foreign landings are responsible to sample those.

Agreement: Herring in ICES Division IIIa

Description of sampling:

Flag country: **Sweden** Landings (2013): 4 500 (tons)

In receiving country: **Denmark**

This means that the receiving country will sample this particular species/stock from

Trawl fisheries targeting small pelagic fish

Sampling Intensity:

Based on last year's landings the sampling effort for this species/stock would be:

No samples: **5**

No of age readings per sample: **50**

No of length measurements per sample: **50**

No of individual weight per sample: **50**

Measurement: 0.5 cm class, 1 g

If landings decrease or increase the amount of samples will be adjusted accordingly.

Data responsibility:

Denmark obtains the samples by market sampling from unsorted catches. Denmark will sample length, age and weight information. Otoliths should be stored in paper bags provided by SLU Aqua. The raw-data and the otoliths will be sent to Sweden for the age determination of the otoliths. A subset of app 100 otoliths should be returned to Denmark for cross-checking of the age interpretation. Sweden is responsible for submitting the data to relevant ICES WG and to the EC.

Data will be delivered to Sweden regularly on a quarterly basis during the year of sampling.

Contact persons:

Receiving country:

Aage Thaarup (att@aqua.dtu.dk or +45 35 88 32 48)

Flag country:

Marianne Johansson (marianne.johansson@slu.se or +46 10 478 40 27)

Agreement: Witch Flounder Division IIIa

This species is a new species to be covered and should be sampled according to the DCF. It has been agreed that sampling of witch flounder could be a joint effort between Sweden and Denmark. Sweden will sample this species in the amount to sustain a sampling scheme of the species for possible future assessment. Denmark is running a complementary sampling scheme

Description of sampling:

Samples will be collected in Denmark and Sweden in order to get a better coverage of the fishery in space and time. Sweden will conduct the age reading of all Danish samples and all the data will then be shared between the countries for raising.

Sampling Intensity:

Approximately 600 individuals are collected and sent to Sweden for age reading

Data responsibility:

Denmark collect the data from the market sampling /sea sampling and sends the otoliths to Sweden for age reading. Denmark is responsible for submitting the data to relevant ICES WG and to the EC.

Otoliths will be delivered to Sweden regularly and at latest 1 February the year after sampling and Sweden will return with the age readings latest 1 March the year after sampling

Contact persons:

Sweden:

Barbara Bland (Barbara.bland@slu.se or +46 10 478 4013)

Denmark:

Helle Rasmusen (hr@aqua.dtu.dk) or +45 35 88 32 08

Agreement: **Herring in ICES Division III b-d.**

Description of sampling:

Flag country: **Sweden** Landings (2013): 14 088 (tons)

In receiving country: **Denmark**

This means that the receiving country will sample this particular species/stock from

Trawl fisheries targeting small pelagic fish. The Swedish fishery is a mixed sprat and herring fishery and mosly the 2 species are landed together. The Danish sampling is therefore conducted on the mixed landings.

Sampling Intensity:

Based on last year's landings the sampling effort for this species/stock would be:

No samples: 14

No of age readings per sample: **50**

No of length measurements per sample: **50**

No of individual weight per sample: **50**

If landings decrease or increase the amount of samples will be adjusted accordingly.

Measurement: 0.5 cm class, 1 g

If landings decrease or increase the amount of samples will be adjusted accordingly.

Data responsibility:

Denmark obtains the samples by market sampling from unsorted catches, stratified by fishery (see above). Denmark will sample length, age and weight information. Otoliths will be stored in paper bags provided by IMR. The raw-data and the otoliths will be sent to Sweden for the age determination of the otoliths. Sweden is responsible for submitting the data to relevant ICES WG and to the EC.

Data will be delivered to Sweden regularly on a quarterly basis during the year of sampling

Contact persons:

Receiving country:

Frank Ivan Hansen (fih@aqua.dtu.dk or +45 35 88 33 63)

Flag country:

Carina Jernberg (carina.jernberg@slu.se or +46 10 478 40 25)

Agreement: **Sprat in ICES Division III b-d.**

Description of sampling:

Flag country: **Sweden** Landings (2013): 28 766 (tons)

In receiving country: **Denmark**

This means that the receiving country will sample this particular species/stock from

Trawl fisheries targeting small pelagic fish The Swedish fishery is a mixed sprat and herring fishery and mostly the 2 species are landed together. The Danish sampling is therefore conducted on the mixed landings.

Sampling Intensity:

Based on last year's landings the sampling effort for this species/stock would be:

No samples: 28

No of age readings per sample: **50**

No of length measurements per sample: **50**

No of individual weight per sample: **50**

Measurement: 0.5 cm class, 1 g

If landings decrease or increase the amount of samples will be adjusted accordingly.

Data responsibility:

Denmark obtains the samples by market sampling from unsorted catches, stratified by fishery. Denmark will send the frozen samples to Sweden once every quarter. Sweden is responsible for length measurements, weight and age reading. Sweden is responsible for submitting the data to relevant ICES WG and to the EC.

Data will be delivered to Sweden regularly on a quarterly basis during the year of sampling

Contact persons:

Receiving country:

Frank Ivan Hansen (fih@aqua.dtu.dk or +45 35 88 33 63)

Flag country:

Carina Jernberg (carina.jernberg@slu.se or +4610 478 40 25)

Signatures:

For DTU Aqua

Jørgen Dalskov

National Correspondent

National Institute of Aquatic Resources

For Swedish Agency for Marine and Water management

Anna Hasslow

National Correspondent

Swedish Agency for Marine and Water management

Date: 6 November, 2014

Marine Institute
Foras na Mara

Bilateral Agreement between the Marine Institute Ireland and National Institute of Aquatic Resources (DTU Aqua), Denmark for the collection of length, maturity and age samples provided for articles 25(1) of (2) of Regulation EU No. 1380/2013 and further specified of Regulation EC 199/2008 and its Commission Decision 2010/93/EU.

Agreement:

Five Vessels fishing on the Danish register, which operate and / or land for first sale into Ireland, will be sampled as part of the 2014-2016 National Programme under the requirements of the EC Data Collection Framework EC 199/2008. The eventual additional sampling costs will be covered within the Irish National Sampling Programme from 2014- 2016.

Description of sampling: The sampling will be for length maturity and age of Blue whiting landings, sampling will be carried out in accordance with the Irish National Sampling Programme.

Sampling Intensity: A maximum of 3 samples of blue whiting will be collected from Danish vessels landing into Irish ports.

Data responsibility: The samples will be processed and age, sex, length, maturity information recorded. These data will be sent to the Danish scientist with responsibility for submitting Danish data to the ICES WGWIDE.

Denmark is responsible for submitting the data to the relevant ICES Expert Groups, and to the EC under the requirements of its Data Collection Framework. Ireland will provide the required data for the species that are requested by the relevant ICES Expert Groups, and the data for the additional species to Denmark as and when requested.

Contact persons: paul.connolly@marine.ie National Correspondent

Marine Institute, Ireland

Signed:

Date : 16th June 2014

Danish Institute for Fisheries Research

Signed:

Date: 28/7 2014

Marine Institute
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